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which ensures the joint between the Closet and Soil-pipe being well made. The joint between the earthenware and metal—always difficult to make—being *above the trap*, there is no danger of sewer gas entering the house through careless fixing.

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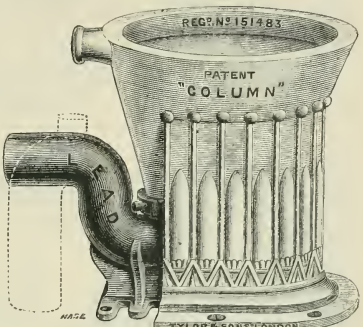
with large overflow, flushed every time the Closet is used, enamelled box and patent Regulator Valve under seat, (waste preventing if desired,) making the closet quite noiseless, and specially adapted for fixing upstairs in private houses.



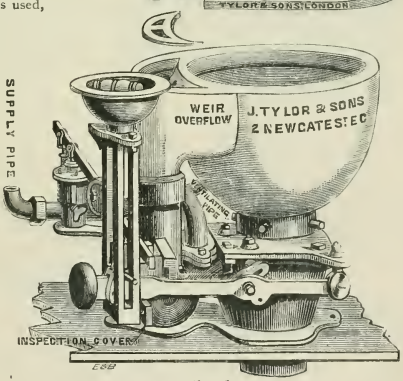


Fig. $\frac{1}{11}$.

INSTRUCTIONS FOR FIXING.

A *Drawn Lead* trap should be fixed beneath the floor, a 2-in. Ventilating pipe should be taken from it into the Soil-pipe (*above the top closet*), which should be carried up, *full size*, to several feet above the top windows, and a 1-in. Puff-pipe should be fixed to the box of the Closet and be carried through the wall.

These two Closets were the *only* ones which obtained Certificates of Merit at the Brighton Exhibition of the Sanitary Institute, 1890.

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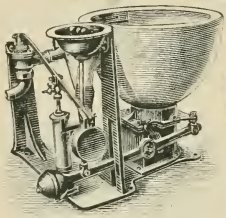
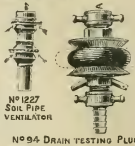


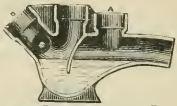
No 1008 Improved Valve W C Apparatus

No 1041 Latrine.

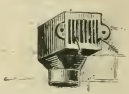


No 1227 Soil Pipe Ventilator

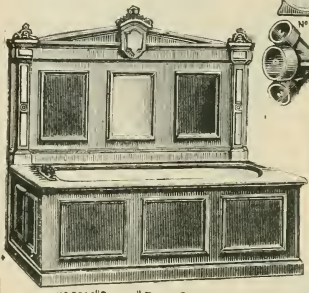
No 94 Drain Testing Plug



No 1140 Intercepter Trap



No 1263 Inlet Ventilator



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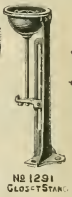
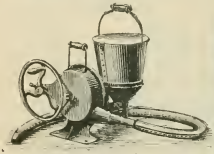


No 1291 Closet Stan.

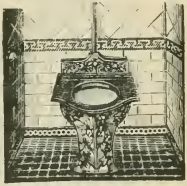
No 1227 Soil Pipe Ventilator

No 981. Patent Trap

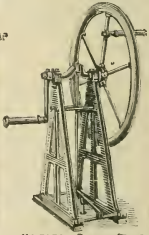
No 980 Patent Lead Trap



No 942 Drain Testing Asphyxiator



No 1027 W.C. Apparatus



No 5273 Pumping Frame

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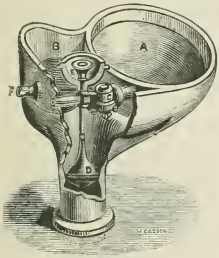

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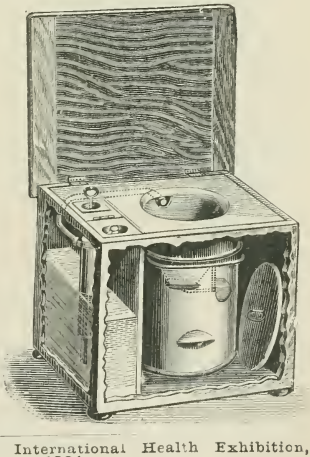

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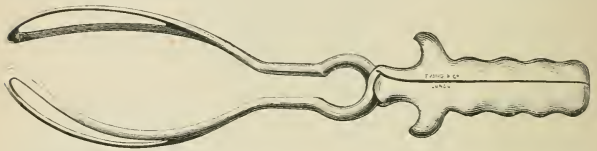

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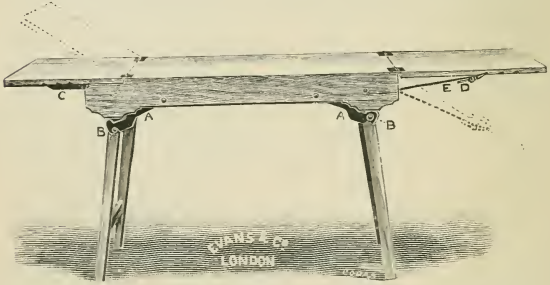

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HENRY DWIGHT CHAPIN, M.A., M.D.
SAMUEL CRADDOCK, M.R.C.S.
SURG.-MAJOR CROMBIE, M.D., L.R.C.S.
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PROF. DUJARDIN-BEAUMETZ, M.D.
W. H. ELAM, F.R.C.S.
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E. LONG FOX, M.A., M.D., F.R.C.P.
J. DUNDAS GRANT, M.D., F.R.C.S.
G. M. HAMMOND, A.M., M.D.
DR HAVILLAND HALL, M.D., F.R.C.P.
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FRANK W. JACKSON, M.D.
W. ALLAN JAMIESON, M.D., F.R.C.P.
ROBERT JONES, F.R.C.S.
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THROAT PILES, ETC.

HENRY DWIGHT CHAPIN, M.A., M.D., *Professor Diseases of Children, Post-Graduate School, New York, and at the Women's Med. Coll. of New York Infirmary; Physician to Demilt Dispensary, etc.*
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J. DUNDAS GRANT, M.A., M.D., F.R.C.S. Ed., *Surgeon Central London Throat and Ear Hospital.*
DISEASES OF EAR

F. DE HAVILLAND HALL, M.D. Lond., F.R.C.P., *Physician St. Mark's Hospital; Physician Out-Patients at Westminster Hospital.* DISEASES OF LUNGS

G. M. HAMMOND, A.M., M.D., *Professor of Diseases of Mind and Nervous System, New York Post-Graduate School and Hospital.* DISEASES OF NERVOUS SYSTEM

JONATHAN HUTCHINSON, Jun., F.R.C.S., *Assistant Surgeon London Hospital, late Ophthalmic Surgeon Great Northern Hospital, London.* VENEREAL DISEASES

FRANK W. JACKSON, M.D., *Chief of Clinic, Medical Division, College of Physicians and Surgeons; Assistant Visiting Physician to Roosevelt Hospital Out-Patient Department, New York.* DISEASES OF HEART

W. ALLAN JAMIESON, M.D. F.R.C.P. Ed., *Extra Physician Diseases of the Skin, Edinburgh Royal Infirmary; Lecturer on Diseases of the Skin, Edinburgh School of Medicine.* DISEASES OF SKIN

ROBERT JONES, F.R.C.S. Ed., *Consulting Surgeon Manchester Ship Canal.* ORTHOPÆDICS

W. LANG, F.R.C.S., *Ophthalmic Surgeon and Lecturer on Ophthalmic Surgery, Middlesex Hospital, London, Assistant Surgeon Royal London Ophthalmic Hospital.* DISEASES OF EYE

JAMES R. LEAMING, M.D., *Emeritus Prof. New York Post-Graduate School and Hospital, Consulting Physician St. Luke's Hospital, New York.* DISEASES OF HEART

A. H. N. LEWERS, M.D. Lond., M.R.C.P., *Assistant Obstetric Physician London Hospital.* OBSTETRICS

A. A. LIÉBEAULT, M.D., *Nancy, France.* PSYCHO-THERAPEUTICS

GREVILLE MACDONALD, M.D. Lond., *Physician to the Hospital for Diseases of the Throat and Ear, Golden Square, London.* DISEASES OF NOSE

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WM. J. PENNY, F.R.C.S., *Surgeon Bristol General Hospital; late Lecturer on Operative Surgery, Bristol Medical School.* GENERAL SURGERY

A. W. MAYO ROBSON, F.R.C.S., *Surgeon to Leeds Infirmary; Lecturer on Practical and Operative Surgery, Yorkshire College; Examiner in Practical and Operative Surgery, Victoria University.* ABDOMINAL SURGERY

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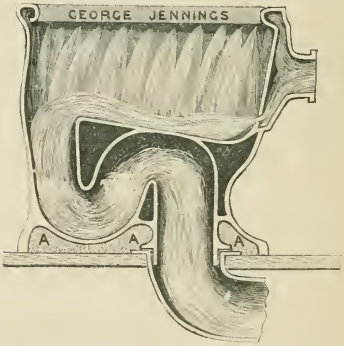

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PREFACE.

THE Index to this volume contains nearly three thousand references to diseases and remedies. The synopses appended to the various articles contain a much larger number, but if included in the general index would have extended it beyond useful limits. This will convey some idea of the labour and responsibility which the production of the "Medical Annual" involves. A glance at the list of those who have contributed to its pages will show that this responsibility has been shared by representatives of the profession in Great Britain, the United States, France, and India.

We have done our best to strike a happy medium between the desire of the specialist for detail, and of the practitioner for a handy work of reference, and although we can hardly expect to succeed in this to the full satisfaction of every reader, the experience of past years teaches us to hope that the ninth annual issue will be received with the same kindness and consideration that have been extended to our previous efforts.

While our main object has been to set forth the therapeutic side of medicine, we recognize that diagnosis and modern pathology have such a direct bearing upon treatment, that our work would be less useful if these subjects had no place in it.

Our aim has always been to supplement the literature of the year by practical articles dealing with subjects which have outgrown the limits assigned to them in the text-books.

Among such articles in our present issue we may call attention to "The Hand as a diagnostic feature in diseases of the Nervous System," by Dr. E. L. Fox; "Methods of Testing for Errors of Refraction," by Mr. William Lang; "Recent Tests for Deafness," by Dr. J. Dundas Grant; "The Sputa as a means of Diagnosis," by Dr. F. J. Wethered; "The Motor Centres of the Brain," by Mr. W. H. Elam; "The Diagnosis of Functional and Organic Diseases of the Heart," by Drs. Leaming and Jackson, of New York; and "The Diagnosis of Gastric Neurasthenia," by Dr. Dujardin-Beaumetz, of Paris.

We have used illustrations wherever they appeared necessary to elucidate the text, and colours have been introduced into some of these for the first time in this issue.

While the work has been in the press, we have sustained a severe loss by the death of one of our editorial staff: Hugh Owen Thomas has written his last article, and it will be found in this volume. His strong individuality was never affected by the conditions of professional life. He did everything in his own way, and that his ways were good is evidenced by the great reputation he acquired in his own branch of treatment, the affection borne him by his colleagues, and above all by the fact that when his body was borne to the grave the poor wept by the roadside. They expressed more eloquently the value of his life's work than any word which we can write.

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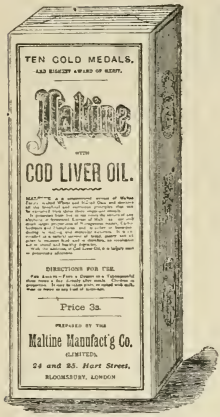

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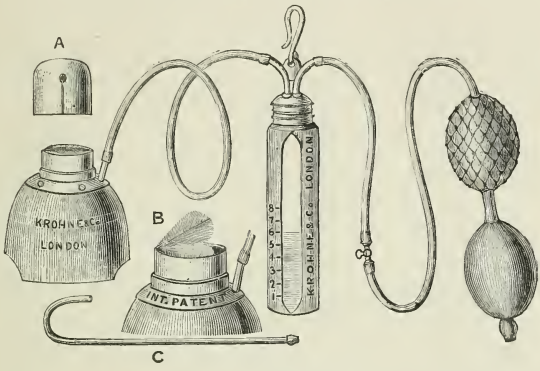

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AND

REVIEW OF THERAPEUTIC PROGRESS FOR THE YEAR 1890.

BY PERCY WILDE, M.D.

THE new Antipyretics, Hypnotics and Analgesics, drugs which represent the palliative rather than the pathogenetic side of therapeutics, have formed the principal subject of discussion during the past year.

The *Antipyretics* have been brought within a more limited and defined sphere of action. Few are now ready to adopt the view expressed by Dr. Masius, of Liege, at the International Congress of Therapeutics and Materia Medica held in Paris, who affirmed their value in all febrile diseases, and argued that the heat due to fever not being a necessary process of natural elimination, should be checked by every available means. Dr. Masius found little support from the meeting, who applauded Dr. Williams, of Boston, U.S.A., when he condemned their use because they seldom benefited the disease, and their result was to retard convalescence. Dr. Stockwiss, of Amsterdam, holds that with the exception of quinine, they are little better than poisons, and in Dr. Semmola's opinion they give temporary relief only at the expense of the patient's strength and early recovery.

Dr. Broadbent, at the British Medical Association Annual Meeting, after describing the value of the cold bath in controlling hyperpyrexia, said, "I need hardly remind my hearers that antipyretic drugs are of no avail in such an emergency, and in typhoid fever I have seen nothing but harm from their continuous employment. They afford an easy triumph to the medical man, and he may persuade himself, as well as the sufferer and his friends, that the diminished febrile heat is a step towards recovery, when the remedy may not only lower the temperature but depress the patient. While, however, I deprecate the indiscriminate employment of antipyrin and its congeners, I must not

omit to mention that at the outset of pneumonia, given early and in repeated doses, it sometimes appears to cut short the attack. The opportunity is soon after the rigors, and long before the development of physical signs. I have seen this in old people in whom an attack of pneumonia must have been fatal."

Surgeon-Major Alexander Crombie, whose experience at Calcutta in dealing with many forms of fever is valuable on this point, has recently contributed an article to the "Practitioner," in which he gives some suggestions for the selection of the antipyretic. He says that while he does not expect to cut short an attack of fever by resorting to them, he uses them in those cases of hyperpyrexia, when the life of the patient is threatened by the height of the fever itself; then the temperature must be reduced at all costs, and in most cases the most rapid antipyretic is the best. In such cases he would give **Antipyrin.** But when the temperature is not so high as to immediately of itself endanger life, it may nevertheless at 103° or upward lead to structural changes, especially in the muscular tissue of the heart, which constitutes the great danger of long-continued pyrexia. Here a reduction of temperature becomes imperative, and the question is now as to how it may be done most safely. In many cases this is best accomplished by means of the **Cold Pack**; but there are so many practical difficulties in carrying out such a practice that we are reduced to a choice of antipyretics: this now lies between phenacetin and antifebrin, though Dr. Crombie's opinion is that phenacetin will best answer the purpose; especially as it possesses a certain amount of soporific power, so much so that in cases of slight feverishness, accompanied by insomnia and great restlessness, small doses of 3 or 4 grains of **Phenacetin**—not sufficient even in India to produce perceptible diaphoresis—will insure a quiet, peaceful night, with no headache in the morning.

Referring to the comparative action of these drugs, Surgeon-Major Crombie considers that antipyrin stands first, especially in regard to its rapidity of action, but that phenacetin is safer, and although the fall of temperature is more gradual, it is of longer duration than with either antipyrin or antifebrin. Its use is never attended with collapse, although he found that it is followed by quite as profuse sweating as antipyrin or antifebrin. In general, therefore, he advises that in heat-apoplexy, sunstroke, and hyperpyrexia generally, antipyrin is indicated; in temperatures of 103° to 105°, **Antifebrin** or **Phenacetin**; in temperatures below 103° (an antipyretic being indicated) the preference should be given to phenacetin.

The *Analgesics* have formed the subject of an important lecture by Dr. Dujardin-Beaumetz. (See "Thérap. Gaz.," Dec. 16, 1890.) He

regards **Morphine** as constituting the most prompt and certain means of assuaging pain, but as the most dangerous of all, because of its tendency to produce morphomania. **Solanin** was especially valuable in certain diseases of the spinal cord (systematized scleroses and medullary affections). He recommends doses of 10 centigrammes (2 grains nearly) given in capsules three times a day. The objection to this remedy is the difficulty of obtaining it pure, and its high cost. **Aconitine** was of the highest value in neuralgia of the face, but not where pain occurred elsewhere.

Salicylic acid would relieve the pains of ataxia, but only in such large doses as to cause cerebral symptoms, and its use had been abandoned in favour of **Antipyrin,** which Dr. Dujardin-Beaumetz places in the first rank among the analgesics. It has little toxic power in the necessary dose for analgesic purposes, and more than 45 grains a day is seldom needed.

Close after antipyrin, and second only because of its insolubility, he places **Methylacetanilid,** or **Exalgine,** to which he devotes a careful description. It is more active than antipyrin, and does not produce an eruption. In ordinary cases 4 grains, twice or three times daily, is a suitable dose, although, in rebellious cases, the quantity has been increased up to 20 grains a day.

Phenacetin, which is placed third on the list, being sparingly soluble, is proportionately non-toxic. It is best administered in capsules of 7½ grains, once or twice daily, and is especially serviceable in the neuralgias of the hysterical.

Acetanilid should be placed last, not because it has less power, since that is not true, but on account of the alarming cyanosis which sometimes follows its use. This discoloration, however, is stated not to be particularly harmful, the remedy being exhibited sometimes for months without producing more than a passing bluish discoloration of the skin and mucous membrane.

The *New Hypnotics* were discussed both at the Annual Meetings of the New York Medical Association, and of the British Medical Association, 1890.

Making reasonable allowance for individual preference and the difficulty on the part of the speakers of selecting the hypnotic which was most suitable for particular cases, there was a remarkable concurrence of opinion respecting the comparative actions of the various drugs.

It is first to be noted that none of these new hypnotics take the place of **Opium** in subduing pain. Neither amylene hydrate, methylal, paraldehyde, urethan, nor sulphonal are to be classed among the

analgesics, their action, like chloral, being simply to produce sleep, and among such drugs most observers consider **Chloral** to still retain the first place as regards certainty of effect. **Urethan** appears to be the most rapid in its action, but it is by general consent looked upon as a weak hypnotic and very uncertain. So far its use does not appear to be accompanied by any dangerous after-effects. **Sulphonal,** concerning which there has recently been much diversity of opinion, is placed by Prof. Leech, of Manchester, next to chloral as regards potency, and this also appears to be the opinion of Dr. W. H. Flint, of New York; but a conspicuous disadvantage of sulphonal is the slowness with which it produces its effects, in some cases its action being deferred until the next day. Here both **Amylene Hydrate** and **Paraldehyde** are superior to it, both being only slightly slower in action than urethan. A drawback to both these is their unpleasant taste. This may be discounted in some measure by giving the amylene hydrate in capsules, and preparing paraldehyde in a mixture with syrup of lemon. **Hypnone** is also better given in capsules or in almond oil, but Dr. Flint's experience with it has been so unsatisfactory that he has practically discontinued its use. The sleep produced by an average dose of the new hypnotics appears to be from five to seven hours, but both with urethan and **Methylal** the period is generally much shorter.

With regard to the comparative dangers of these drugs, it is too early yet to form an opinion. None can be said to be absolutely free from unpleasant effects on the day following its administration, although sulphonal, from which many unpleasant effects have been recorded even after small doses, will be taken by many patients without any apparent after-symptoms. In reading of such cases it is necessary to bear in mind that the greater the popularity of the drug, the larger will be the number of recorded toxic symptoms. Comparing them as a class with chloral they appear less likely to depress the respiratory and circulatory functions, and cause danger when the heart and lungs are diseased. In reference to this point the members of the British Medical Association Meeting were reminded by Dr. H. Woods of an old friend to many, viz., the mixture of **Chloral Hydrate** and **Ammonium Bromide.** He had found this free from a depressing action on the heart, and very effective in simple insomnia.

The new hypnotic **Chloralamide** has been the subject of so much conflicting evidence that it is difficult to assign it a place in this discussion. The reader is referred to our report.

The *Cardiac Tonics* were reviewed at the International Congress for Therapeutics and Materia Medica. The most marked feature of

the discussion was the remarkable unanimity with which the members condemned the active principles digitalin, strophanthin, convallarin, etc., as substitutes for the drugs from which they are extracted. Dr. Dujardin-Beaumetz was particularly decided in his condemnation of potent poisons, the action of which was imperfectly known. Dr. Constantine Paul made some very forcible remarks on the abuse of heart-tonics. He denied their existence in the true sense of the term. "They act on the heart-beats, but give no strength to the organ. A fatigued heart may be likened to an old steam-engine, still able to give useful work under careful management. When the engine slackens, an experienced engineer will see to the flues, clean and oil all around, and the old machine will go on for a good while. But have a youngster in charge, and he will force the fire and burst the boiler. In the same manner, on giving **Strophanthus,** you cleanse the economy by copious diuresis and relieve the pressure. Even a simple puncture with the thermo-cautery often greatly favours the action of cardiac medicines. But giving caffeine under such circumstances is like adding more coal under an overworked boiler. One of the best heart medicines is the **Convallaria Majalis,** because, after producing cardiac regularity, it will keep it up for a long time."

The general result of the discussion was to confirm **Digitalis** in its position as the best heart-tonic, and the preparation of it which received the preference was the powdered leaves, Dr. Masius objecting to the infusion, and preferring the maceration ; but Dr. Dujardin-Beaumetz preferring a cold maceration of the leaves to any other preparation.

Strophanthus, although regarded as being less trustworthy, received warm recognition on account of its being well tolerated, and not likely to produce cumulative effects. It was found particularly useful for relieving dyspnœa and angina pectoris, while **Scoparius** was considered one of the best remedies for simply regulating the heart-beats. Dr. Féréol recommended that, when a cardiac tonic was needed for a lengthened period, convallaria should be given for fifteen days, then omitted for the same period, and then taken up again. In this way it might be used for years with constant and reliable effects.

The recent researches of M. Trasbot, and of Prof. Germain Sée, both communicated to the French Academy of Medicine, teach us to regard **Iodide of Potassium** as among the cardiac-tonics. The experiments of the latter writer show that iodide of potassium first determines phenomena of excitation, with the action of the heart

accelerated, an elevated pressure, a manifest vaso-constriction; then follows vaso-dilatation, with low pressure, which is also determined by iodide of sodium. In the vaso-constriction, with elevation of pressure, and the strengthening of the heart due to the potassium, the vaso-dilatation, and lowering of the pressure due to the iodine, we have, he says, the explanation of the effects of the powerful action of the iodide of potassium. The vaso-dilatation explains the hyperæmia of the bronchial mucous membrane and the hypersection which results from this drug, and which is so useful to asthmatics for getting rid of viscous secretions. It explains the pulmonary hyperæmia which results from the venous stagnation in cardiac subjects. It also explains the antidyspnœic power of the iodide of potassium in facilitating the circulation in the medulla, and consequently restoring it to its normal functional activity. Immediately the paroxysmal or continued dyspnœa, the fits of suffocation, etc., completely disappear. The vaso-dilatation finally explains how the heart becomes freed from the obstacles which the tonicity of the arterial vessels presents to it, how the coronary circulation becomes more free, and how the heart becomes re-enforced and beats with energy.

Prof. Germain Sée considers that iodide of potassium is applicable to the greater part of the diseases of the heart and coronary vessels; he recommends it in fatty degeneration, cardiac debility from overwork, and in angina pectoris, both true and false. In Basedow's disease, where there is already a morbid vaso-dilatation, it will be useless or even dangerous.

Among other possible cardiac tonics, mentioned in our report this year, **Apocynum** appears worthy of further investigation.

ABRUS PRECATORIUS.

The seeds of this plant, which are of a bright red colour and about the size of a pea, are well known. The plant has various names, kunch, ratti, and jequirity, the seeds being called in the Indies "chicken-eyes," in Germany "paternoster-erbsen," and in Britain "jumble-beads." Under the name of jequirity seeds they have been used to make an infusion which is employed as an application in cases of chronic granular conjunctivitis.

L. Wecker considers the infusion of 1 to 20 too strong for this purpose. ("U. S. Dispen.")

At a recent meeting of the Society of Naturalists of Dorpat, Prof. Kobert ("Wien. Med. Blät.," Nov. 7, 1889), presented an account of a new poison, of an albuminous nature, which he had extracted from the seeds of this plant. He finds that it is one hundred times more poisonous than strychnine, and resembles in its

action the poison which may be extracted from castor-oil seeds. He finds death to be due to the coagulation of the blood corpuscles.

We have not sufficient particulars of this new poison to be sure whether it is not identical with abrin, a proteid substance made out, by J. H. Warden and L. A. Waddel, of Calcutta, in 1884, and the existence of which was confirmed by Bufalini ("Ann. di Chim. e di Farm. No. 2, 1886), and which was looked upon by the former investigators as a violent cardiac poison.

The seeds are practically harmless when boiled, owing to the coagulation of the albuminous poison, but their poisonous properties in the fresh state have long been known to the natives of India. The fresh seeds are rubbed up in their fresh condition, made into a little roll with a sharp point, and this is stuck into the skin of a man or animal. This is sufficient to destroy life, while the point of puncture leaves no more mark than the sting of an insect.

The seeds also contain abric acid ($C_{12}H_{24}N_3O$). There is need for further experiment respecting the action of the poisonous principle of these seeds.

AEROCOMIA SCLEROCARPA.

This plant is found in South America. The flowers have a turpentine odour, and contain 2 per cent. of tannic and gallic acid. They are popularly used as a remedy in leucorrhœa, diarrhœa, albuminuria, and hæmorrhage.

AMMONIUM CARBAZOTATE.

Dr. G. M. Hammond, in the course of a paper on **Exophthalmic Goitre** read before the section of Neurology in the New York Academy of Medicine, recommends the use of carbazotate of ammonium in the treatment of this disease. Its value was accidentally discovered by Dr. A. C. Combes. Dr. Hammond quotes three cases in which he considers that decided benefit resulted. He gives the drug in the form of pill—3 grains daily in 1-grain pills for the first week, increasing each dose by 1 grain in the second week, and by a further addition of another grain in the third week. At about the end of the first week the skin and conjunctivæ assume a slight saffron colour, which deepens if the drug is persisted in; then a peculiarly unpleasant odour exhales from the body, and can be distinctly noticed within six or eight feet of the patient; subsequently severe gastric disturbances are apt to set in. It is rarely possible for the patient to take the remedy for more than three weeks; but whilst it is being taken the effects upon the heart, the respiratory tract, and the exophthalmos are undoubted.

REFERENCE.—"New York Med. Jour.," Jan. 25, 1880.

ANEMONIN.

An active principle obtained from pulsatilla. Dr. Bovet (Société Médicale des Hôpitaux) recorded cases of **Dysmenorrhœa** with or without leucorrhœa in which this remedy was successfully employed. MM. Baz and Dormat record cases of **Blenorrhagic Orchitis** cured with it. The reputation of pulsatilla in these affections was gained by the use of the tincture made from the entire plant in moderate doses. It has not yet been shown that the active principle offers any practical advantage over the older and less costly preparation. (See "Pulsatilla.")

Dose, ⅛-gr. in red wine.

ANILINE.

Several papers have appeared upon the application of aniline as an **Antiseptic** in various ophthalmic cases, and also in some venereal affections. Methyl violet was found by Prof. Stillery to have the highest degree of antiseptic properties among the aniline colours, and a pure form of this is now manufactured under the name of pyoktanin. The recorded results do not tend to prove that this substance possesses any superiority over other antiseptics, nor do we gather that any specific action is claimed. We append a list of recent articles referring to this subject.

REFERENCES.—Stilling, "Lancet," July 5; Carl, "Fortschr. de Med.," 1890, No. 10; Braunschweig, "Gaz. Méd. de Paris," 1890, No. 24; Janicke, Ibid, 1890, No. 26; Petersen, "Wratsch," 1890, No. 20; Bresgen, "Deut. Med. Woch.," 1890, No. 24; Sée and Morau, "La Méd. Moderne," July 10, 1890; Editorial Summary, "Ther. Gaz.," Aug., 1890.

ANNIDALIN.

A compound of thymol and iodine produced by Messinger and Vortmann ("Phar. Jour.," Sept. 26, 1889). It is probably similar to a more definite compound of the same substance which has been produced under the name "Aristol," (which see).

APOCYNUM CANNABINUM.

This drug formed the subject of a graduation thesis presented to the University of Cambridge by Mr. George R. Murray, and published in the "Therapeutic Gazette," Sept. 15th, 1889. The author having described the root, which is the medicinal part of the plant, mentioned that Schmeideberg (1883) isolated two active principles, apocynin and apocynein, "similar in their properties to digitalis." He speaks of its use in America both as a diuretic and hydragogue cathartic, and of the happy results claimed to be obtained with it

in pleurisy with effusion and the anasarca of Bright's Disease. He also records Dr. Sydney Rogers' unsuccessful trial with it in Bright's Disease in doses of 10 to 20 drops four times a day.

As we have pointed out ("Medical Annual," 1888), the difficulty with apocynum has been to discover the proper indications for its employment; for while in our hands it has sometimes yielded a brilliant success it has more often failed.

Mr. George Murray goes on to quote some unpublished experiments made as to its physiological action by Dr. J. Rose Bradford. He used a tincture of the root (1 to 10 of proof spirit), and found that the principal action of apocynum is on the heart. The heart of a dog is slowed down to a very remarkable degree, for when it is well under the influence of this drug it beats as slowly as two beats to each respiration, or even three beats to every two respirations. This is a much more powerful effect than can be produced experimentally with digitalis. For before this amount of slowing is reached, the vagus becomes paralyzed, and the heart beats more rapidly and irregularly.

Apocynum strengthens the heart's beat and increases the tonus, so that it stops the frog's heart in systole. It generally stops the mammalian heart in diastole, but a sudden massive dose may stop the mammalian heart in systole. It may further be noticed here that clinically we find that it regulates the action of an irregular heart.

He found that apocynum causes no definite rise of blood-pressure, indicating that it does not cause contraction of the arteries.

In its physiological action, as a whole, on the vascular system, it resembles strophanthus more closely than digitalis, for it acts in a similar way to strophanthus on the heart, and, like it, does not cause contraction of the arteries.

Mr. George Murray considered, therefore, that apocynum should prove useful in cases of **Mitral Disease**, and gives a case treated at University College Hospital under the care of Dr. Sydney Ringer, showing the results obtained from it:—The patient was a woman, fifty-eight years of age, with mitral regurgitant murmur, œdema of feet and hands, and cyanosis of face and great dyspnœa. The pulse on admission was 128; and 16 ounces of water were passed in twenty-four hours. On the fourth day of treatment the pulse had fallen to 94, and 179 ounces of urine had been passed in the twenty-four hours. The dropsical fluid having been got rid of, the quantity of urine began to diminish, while the pulse maintained a normal average.

The author then proceeds to show the theoretical grounds upon which apocynum may be given in cases of mitral constriction, and

records a case in which the good results obtained by digitalis were repeated when digitalis having to be discontinued apocynum was given in its place.

Mr. George Murray's paper is one of considerable practical interest, and will well repay reference.

The dose employed was 10 minims of the tincture of the root (1 to 10 of proof spirit).

ARECA CATECHU.

From the fruit of this plant Jahns has isolated three alkaloids—one which he terms arecaline, the other arecaine, and the third which is only obtained in too small quantities to be capable of study.

The first of these, arecaline, has a composition of $C_8H_{13}NO_2$, strongly resembling the arecaine of Bombelon, is an oily liquid, strongly alkaline in its reaction, soluble in water, alcohol, ether, and chloroform. Its salts are very soluble, while all are crystalline, the bromo-hydrate being the most readily crystallized.

The second alkaloid, arecaine, has the formula $C_7H_{11}NO_{21}H_2O$, forms colourless non-deliquescent crystals, very soluble in water and diluted alcohol. It is not soluble in concentrated alcohol. It is also insoluble in ether, chloroform, and benzol. The watery solution is neutral, and has a somewhat saline taste. This alkaloid combines with acids to form crystalline salts, which are all soluble in water, less soluble in alcohol.

The arecaline is stated to constitute the active principle of the areca nut, and is the body to which its property as a **Tænicide** is attributable.

Experiments made with areca show that in small doses it diminishes the number of the heart-beats, and even is capable of arresting its pulsation in diastole. Its action may be neutralized by atropine. Arecaline at the same time acts upon the respiration. Small doses increase the number of respiratory movements. Large doses arrest them, in fatal doses even before the heart is affected. Doses of ¾ of a grain in medium-sized dogs, given subcutaneously, produce tetanic convulsions which are followed shortly by partial paralysis, the animal being affected with vomiting and liquid evacuations in which fragments of tænia are frequently found. Small doses especially increase the peristaltic action of the intestines in cats and dogs. Further, in the physiological action of this alkaloid there is extreme contraction of the pupil, which is also produced by instillation in the eye. Areca nuts have been recommended as a tænifuge in the form of powder in doses of 60 to 120 grains. It is claimed by Barclay that the tænia will be expelled three or four hours after the introduction of this remedy. It appears, however, that like

other remedies which have been introduced as tænicides, it may have a much wider range of action and prove a useful addition to our materia medica when we have more information about it.

REFERENCES.—"Bulletin gen. de Thérap." 1889, No. 30; "Therap. Gaz.," December 16, 1889.

ARISTOL.

This compound is said to be formed, as a voluminous red-brown amorphous precipitate, when an aqueous solution of iodine in potassium iodide is treated with thymol in caustic soda solution. It is represented as being dithymoldiodide, in which the hydrogen of the two hydroxyls of dithymol is replaced by two equivalents of iodine; the compound is, therefore, calculated to contain 45·8 per cent. of readily removable iodine. Aristol is described as being insoluble in alcohol and freely in ether, but precipitated from the ethereal solution on the addition of alcohol. It is also soluble in fixed oils, but it is necessary to effect solution without heat to avoid decomposition, and for the same reason it must be kept sheltered from light. Upon distilling the compound with lime, dithymol is obtained. Aristol is said to be non-poisonous, it not being absorbed by the organism. It is claimed that it shares with chrysarobin the property of being an active but harmless remedy in **Psoriasis**, with the advantage that it does not cause the same intense coloration of the skin or produce symptoms of conjunctivitis. Further, it is said to act as favourably and quickly as the best remedies in **Mycosis** and **Lupus**, without being so irritating as some, and to be valuable as a dusting-powder for **Wounds** and **Burns.**

Dr. Lowenstein has employed it as an insufflation in place of iodoform in cases of **Ozæna** ("Internat. Klinische Rundschau"). Dr. Hughes also finds it useful in ozæna, and for rhinitis with dryness of the mucous surface.

Dr. Brocq presented a case at a meeting of the Société Médical des Hôpitaux in which extensive superficial **Epithelioma** of the face had healed under the application of aristol.

Dr. Gaudin reports successful results from its use in cases of **Psoriasis, Ulcers, Eczema,** and **Chancre** in which iodoform and hydrarg. biniod. had been previously used. Drs. Schemien, Schuster, Seifert, Neisser and others also record various successful cases including psoriasis, syphilitic ulcers of the leg, and naso-pharynx lupus psoriasis, **Moist Condylomata** and suppurating gummata.

Dr. Von Swiecicki has used it with advantage in gynæcological practice, applying it as a dusting powder in cases of **Endometritis,** hyperplasia of the cervix, parametritis, eczema vulvæ, etc. Dr. Brocq, who gives a long report of this Antiseptic in the "Journal of

Cutaneous and Genito-Urinary Diseases," July 1890, concludes that it will render very real service in ulcerations of the skin, superior to iodoform because it has no smell, and to the subcarbonate of iron because it does not stain so much. Aristol is used in the form of powder, or dissolved in ether or collodion (1 to 10), in combination with vaseline, lanoline or zinc starch (1 to 10).

ARMERIA VULGARIS.

The maiden pink (*Armeria vulgaris*, Willd.) enjoys considerable reputation in southern Europe as a domestic remedy, taken in the form of an infusion, 10 parts to 200, and has recently been subjected to study by Dr. Brunner, of Buda-Pesth ("Pharm. Post," May 25, 1890), as a **Diuretic.**

The author claims that the infusion of this remedy is of great service in the treatment of **Catarrhal Affections of the Kidneys** and bladder, as well as in producing solution of renal and vesical calculi. It acts as a stimulant to the muscular tissue of the bladder and of the uterus, and is, therefore, indicated in the treatment of **Urinary Concretions,** hæmorrhage of the bladder or of the uterus.

Dr. Brunner states that he has employed it with the most satisfactory result in such cases.

ARSENIC.

Sulphide of Arsenic.—The crude form of this salt, reälgar, As_2S_2, has been employed by Dr. Mc'Laughlin in doses of $\frac{1}{100}$ grain. He found great benefit from it in old standing cases of **Psoriasis,** the patients not being able to tolerate the usual preparations of arsenic, although this was borne well. In cases of **Acne** and **Boils** he prefers it to the sulphide of calcium.

How does Arsenic Paralyze?—In his Inaugural Dissertation presented to the medical faculty of Breslau, Dr. Conrad Alexander gives the result of some experiments designed to answer this question and concludes as follows: (1,) That the symptoms in cases of arsenical poisoning in man point to the fact that the symptoms are attributable to the action of the poison on the peripheral nerves and muscles, and are due to the production of multiple neuritis; (2,) It is possible in rabbits in certain instances to produce permanent paralysis with arsenic, which is especially located in the posterior limbs, and which is accompanied by a high degree of atrophy of the muscles; (3,) In paralyzed animals degenerated and atrophied nerve-fibres are to be found in the small muscular nerve-branches and in the nerves of the subcutaneous connective tissue, accompanied by swelling of, and hæmorrhage into the perineurium. The spinal cord of animals

so paralyzed is perfectly normal ; (4,) Paralysis in these animals, therefore, is dependent upon degeneration and atrophy of the peripheral nerves and muscles ; (5,) Experimental observations seem to warrant the assumption that arsenical paralysis in man is similarly produced ; (6,) The muscular atrophy created in animals poisoned with arsenic is not of neurotic origin, but is entirely independent of the nervous system ; (7,) The muscular atrophy in animals poisoned by arsenic, in the case of rabbits, is not a fatty degeneration, but a coagulation necrosis, which is ordinarily accompanied by the formation of calcareous deposits ; (8,) Degeneration of nerves and muscles is, in all cases of paralysis occurring in animals poisoned with arsenic, probably due to the production of disturbed action in the capillaries of the nerves and muscles.

BROMIDE OF GOLD.

This drug appears to be ten times more active, weight for weight, than the ordinary bromide preparation. Cases are recorded by Professor Merzhœvski, Dr. Rozenbach, and Dr. Danillo, of obstinate cases of **Hysteria** and **Epilepsy** treated with great advantage by doses of ½ to 1 grain of the salt. It is very soluble in water, and keeps well if not exposed to the light. Its greatest objection is the expense, as it costs about twelve shillings a drachm.

BROMOFORM.

This is a limpid sweet liquid with a not unpleasant odour. It is soluble in alcohol and ether, very sparingly so in water. Sp. gr. 2·13. Dr. Stepp claims great success with it in **Pertussis,** and gives it to children in doses of from 2 to 5 drops three or four times a day.

In a few cases, langour and drowsiness were observed after each dose of bromoform ; but in one only was intoxication seen. This was a weakly child of one and a quarter years old, after bronchitis and measles, treated in the third week with 2 drops twice daily. It probably got more than the prescribed dose, and on the third day it appeared asleep, pallid ; the breathing shallow, the pulse hardly felt, with fixed contracted pupils, and no corneal reflex. Subcutaneous injections of ether revived it, and recovery took place.

He finds that the best way of prescribing it is alone in a teaspoonful of water, with which it does not mix, but falls to the bottom in the form of a button. Care must be taken that this button is really swallowed, and not allowed to remain in the mouth. When given in this way children take it readily enough, though when ordered in the form of a mixture they sometimes greatly dislike it. In consequence of the volatile nature of the substance, and of its tendency to

decompose, it is advisable only to order a small quantity from the chemist at a time—say, forty-five drops. It is also needful to see that the liquid has not any red tinge showing the presence of free bromine. The nurse must be cautioned to keep it from sunlight, and to put the stopper in the bottle immediately after use.

REFERENCE.—"Berlin. klin. Woch.," No. 23, 1890.

CACTUS GRANDIFLORUS (Night-blooming Cereus).

This plant is indigenous to Mexico and the West India islands. The juice exuding from the stems has been employed in poultices applied to gouty and other painful conditions. It has also been used for corns. It is capable, when applied to the skin, of producing excoriation, and the formation of pustules. It has been also used as an **Anthelmintic** in doses of from 2 to 10 grains, and has also obtained some popular reputation in the cure of **Dropsy.**

It was first brought into practical use by Dr. Rubini, of Naples, as a remedy for heart disease. He used it chiefly for functional derangements of the heart, employing a tincture made of four ounces of the fresh stems of flowers and a pint of strong alcohol. This was macerated for a month, and then filtered. Of this he gave 1 to 5 drops, three times a day.

Dr. E. R. Kunge subsequently confirmed these statements of the value of cactus as a cardiac remedy, and stated that he had obtained benefit from it in **Angina Pectoris,** and organic disease of the heart. He gave it in 20-drop doses. Dr. Hale ("New Remedies") expresses himself more doubtful about its powers, but offers some suggestions respecting its action. He chiefly recommends it for the functional derangement of the heart, and he says that hypertrophy, with enlargement, is more under the control of cactus than is hypertrophy with dilatation, which is just the reverse of digitalis. He gives as a characteristic symptom of heart derangement, which indicates it, "*the sensation as if the heart was constricted by an iron band.*"

The writer has used this remedy for some years, and finds the greatest benefit in those cases where there is *over action of the heart, with throbbing in the carotids.*

Dr. Orlando Jones contributes an article upon this drug to the "Brit. Med. Jour.," Jan. 11, 1890. He says that while the beneficial action of digitalis is often most marked where the heart has been overstimulated, as in delirium tremens, its action has often been disappointing when dealing with a feeble heart, especially if that feebleness is excessive and of long duration. Dr. Lauder Brunton has shown that the action of digitalis is divided into three stages. The first stage is that of stimulation of the vagi; the second is sudden depression of the

vaso-motor apparatus of the renal arteries ; the third is depression of the vagus, exhaustion of the ganglia, weakening of the heart, and, as Dr. Mitchell Bruce puts it, the circulation begins to fail.

With cactus grandiflorus the action seems to be the very opposite—that is, the final stage of the action of the drug is that it strengthens the heart, and, consequently, the circulation improves, and the final exhibition of this drug is the reverse of that seen in digitalis.

The author maintains that while digitalis appears to be a drug that is most applicable to sthenic or over-stimulated conditions of the heart, cactus grandiflorus appears to be applicable to **Asthenic Conditions of the Heart.**

The first case to which Dr. Jones calls attention was that of a youth of about thirteen years of age, of strumous diathesis, weedy habit, very feeble, and the heart very weak. Under the steady exhibition of cactus, the heart improved, and the patient grew to be a young man of fairly good health.

The next case was that of a man, aged about sixty, who came under treatment, saying he could not continue his work owing to the suffering produced by exertion. He was found to be suffering from mitral disease, accompanied with loud mitral murmur, and was given cactus and ammonia. He so far improved that he was able to resume work, and continued it for some years till he left the neighbourhood.

The third case is alluded to as that of a man with feeble heart, liver diseased, and general dropsy, the patient having already been tapped several times before coming under Dr. Jones's care. Under the action of cactus the patient's health is stated to have greatly improved, his heart renewed in strength, and the dropsy almost entirely disappeared.

Dr. Watson Williams has used this remedy in **Exophthalmic Goitre** (which see).

The tincture of cactus should be made from the youngest and most tender stems with the flowers, 1 to 20 with proof spirit. The usual dose is from 5 to 15 minims.

CAFFEINE.

An interesting paper was read before the French Academy of Medicine, by Prof. Germain Sée, with reference to the stimulating effect of coffee, kola nut, and other vegetable substances containing caffeine, and the causes which enable persons by the aid of such substances to undergo great physical labour without fatigue. Prof. Sée's experiments tended to show that it was a fact, caffeine placed an untrained man in the position of an individual trained to fatiguing exercises. He concludes that caffeine in man acts on the motor

voluntary influx, which starts from the brain with great energy and acts on the more excitable motor centres. Thus the forces are augmented and fatigue is abolished. Caffeine does not act by saving the nitrogenous tissues from wear and tear, but by facilitating the combustion of the ternary elements of the organism. It seems to augment the central temperature, and to increase the excretion of carbonic acid, and thus furnishes strength to a starved individual, but at his own expense. We are here, apparently, in presence of a paradox: the caffeine on the one part accelerates denutrition; on the other it prevents the evil effects of starvation. Caffeine does not save the tissues, as does the complete absence of all work. It acts like a food in repairing their waste. It acts in stimulating the cerebro-spinal functions on the one part, and also in producing a special excitation analogous to that arising from the mere ingestion of any food stuff. It is known that the ingestion of an aliment will increase the strength, even before it is acted on by the gastric juice, by stimulating the organism to make use of its reserve supplies.

Prof. Reichert, in a recent article on the action of caffeine on tissue metamorphosis and heat phenomena, concludes that the virtues of coffee in the wear and tear of active life are entirely subjective and depend upon a general excitation of the higher tissues, and chiefly upon its powerful exhilarant action on the mental processes. The assumed ability of coffee to replace food, or to increase the power for work without corresponding tissue destruction, is consequently entirely deceptive, and the conditions produced by it are comparable to those observed at times in the insane, in hysteria, or in fright, where the individual may be capable of performing prodigious feats of strength and endurance, but, nevertheless, at the direct expense of his tissues.

REFERENCES.—"Lancet," March 22, 1890; "New York Med. Jour.," April 26, 1890.

CANNABIS INDICA.

A recent correspondence in the "Lancet," anent the variation in action and occasional toxic effects of this drug, has brought from Dr. J. Russell Reynolds an important contribution respecting its clinical value.

In explaining the occasional toxic effects of this drug, Dr. Reynolds says two things must be remembered: first, that, by its nature and the forms of its administration, cannabis indica is subject to great variations in strength. Extracts and tinctures can not be made uniform, because the hemp grown at different seasons and in different places varies in the amount of the active therapeutic principle. It should always be obtained from the same source, and the minimum dose should be given at first, and gradually and

cautiously increased. The second important fact to keep in view is, that individuals differ widely in their relations to various medicines and articles of diet—perhaps to none more than to substances of vegetable origin, such as tea, coffee, ipecacuanha, digitalis, nux vomica, and the like. In addition to the purity of the drug, the possibility of idiosyncrasy must be borne in mind as calling for caution in giving Indian hemp. By gradually increasing the dose and habituating the organism to its use, the use of cannabis indica may be pushed to 3 or 4 grains at a dose with positive advantage. But in Dr. Reynolds' experience 1 grain would bring about toxic effects in the majority of healthy adults; and ¼ of a grain has done the same, but never ⅕, which is the proper amount with which to begin the use of the drug among grown persons, $\frac{1}{10}$ of a grain being the proper initial dose for children. The best preparation for administration is the tincture—1 grain to 20 or 10 minims—dropped on sugar or bread. The minimum dose should be given, as before stated, repeated every four or six hours, and gradually increased every third or fourth day, until either relief is obtained or the drug is proved useless. With such precautions, Dr. Reynolds states he has never met with toxic effects, and rarely failed to ascertain in a short space of time the value or uselessness of the drug.

Its most important results are to be found in the mental sphere; as, for instance, in **Senile Insomnia,** with wandering. An elderly person (perhaps with brain softening), is fidgety at night, goes to bed, gets up, thinks he has some appointment to keep, that he must dress and go out. Day, with its stimuli and real occupations, finds him quite rational again. Nothing can compare in utility to a moderate dose of indian hemp at bedtime—¼ to ⅓ of a grain of the extract. In alcoholic subjects it is uncertain and rarely useful. In **Melancholia** it is sometimes serviceable in converting depression into exaltation; but, unless the case has merged into senile degeneration, Dr. Reynolds does not now employ cannabis indica. It is worse than useless in any form of mania. In the occasional night restlessness of general paretics and of sufferers from the "temper disease" of Marshall Hall, whether children or adults, it has proved eminently useful.

In painful affections such as **Neuralgia, Neuritis,** and **Migraine,** Dr Reynolds considers hemp by far the most useful of drugs, even when the disease is of years' duration. In neuritis the remedy is useful only in conjunction with other treatment, and is a most valuable adjunct to mercury, iodine, or other drugs, as it is in neuralgia when given with arsenic, quinine, or iron, if either is required. Many victims of diabolical migraine have for years kept their sufferings in abeyance by

taking hemp at the threatening or onset of the attack. In sciatica, myodynia, gastrodynia, enteralgia, tinnitus aurium, muscæ volitantes, and every kind of so-called hysterical pain, cannabis indica is without value. On the other hand, it relieves the lightning pains of **Ataxia**, and also the multiform miseries of the gouty, such as tingling, formication, numbness, and other paræsthesiæ.

In clonic spasm, whether epileptoid or choreic, hemp is of great service. In the **Eclampsia** *of children* or adults, from worms, teething (the first, second, or third dentition), it gives relief by itself in many cases. Many cases of so-called **Epilepsy** *in adults*—epileptoid convulsions, due often to gross organic nerve-centre lesions—are greatly helped by cannabis indica, when they are not affected by the bromides or other drugs. Take, for instance, violent convulsions in an overfed man, who is attacked during sleep a few hours after a hearty supper, the attacks recurring two or three times an hour for a day or two, in spite of "clearing the primæ viæ," or using bromine or some other classic drug. These attacks may be stopped at once with a full dose of hemp. In brain tumours or other maladies in the course of which epileptoid seizures occur, followed by coma, the coma being followed by delirium—first quiet, then violent—the delirium time after time passing into convulsions, and the whole gamut being repeated, indian hemp will at once cut short such abnormal activities, even when all other treatment has failed. In genuine epilepsy it is of no avail. In cases where it has seemed to do good, the author doubts the correctness of the diagnosis, and suspects organic lesion or eccentric irritation. In tonic spasms, such as torticollis and writers' cramp, in general chorea, in paralysis agitans, in trismus, tetanus, and the jerky movements of spinal sclerosis, cannabis indica has proved absolutely useless. At the same time, it is most valuable in the **Nocturnal Cramps** *of gouty or old persons*, in some cases of **Spasmodic Asthma,** and in simple **Spasmodic Dysmenorrhœa.** Thus it will be perceived that for the relief of suffering, quite apart from a curative effect, hemp must ever be held in high esteem, and ranked with the poppy and with mandragora.

CASEARIA ESCULENTA.

This drug, says the "Prov. Med. Journ.," has been introduced to the notice of the medical profession by Dr. P. S. Mootooswamy, F.L.S. (Tangore), who believes it to be of considerable value in the treatment of **Chronic Enlargement of the Liver,** also for **Hepatic Obstruction** and **Piles.**

Casearia esculenta is a large shrub or small tree, and belongs to the natural order Samydaceæ, and is found in various parts of India,

where the root is employed by the Hindus, and is regularly sold in the medical bazaars of the district.

The root has been analyzed by Mr. David Hooper, who found it to contain 3 per cent. of neutral resins, partly soluble in spirits of wine, and soluble in ether; tannin about 10 per cent., giving a greenish colour with ferric salts, and resembling rhatania tannic acid in the composition of its lead salt, and in forming a soluble crystalline product when boiled with dilute acid; a cathartic acid, soluble in water, and agreeing in chemical and physiological tests with the cathartic acid of senna. The root also contains a little starch, and 4·8 per cent. of mineral matter.

It acts as a gentle aperient, notwithstanding the tannin present, and is considered by some Vytians to be an alterative in skin diseases, especially in the disease bearing the Tamil name of "padurthamaray," which affects the lower part of the abdomen and extends around the back, and apparently has its origin in disturbance of the hepatic function. For this complaint the bark, ground with water, is applied locally. Dr. Mootooswamy has long known the root to act as a specific in **Diabetes**, when administered in powder or decoction, but it is especially as a valuable remedy for chronic enlargement of the liver, for hepatic obstruction, and for piles, that this new remedy is recommended.

The dose of the powdered root is 2 or 3 drachms, with ¼ of its weight of sugar, twice a day. This is, however, rather a bulky dose, and the decoction would be generally preferred. This is made according to the following formula :—

℞	Root bark of Casearia	ʒij	Aniseed	ʒij
	Cinnamon bark	ʒij	Water	℥x

To be boiled down to three ounces. Dose, 1½ ounce twice a day.

The extract and syrup are now largely used in Bombay; the extract is made by exhausting the powdered root with water and evaporating to the consistence of soft extract, of which the dose is 20 grains. The syrup is made from the extract, 20 grains of the extract being contained in 2 drachms of the syrup, which is taken for a dose.

CHLORALAMIDE (Chloral Formamide).

This is a synthetical product derived from chloral anhydride CCl_3CHO, and formamide CHO,OH_2. It forms colourless crystals, and is said to be soluble in nine parts of water and in one and a half parts of 96 per cent. alcohol. The taste is mild, slightly bitter, but not astringent, while the aqueous solution, which ought to be produced by a temperature not exceeding 140° Fahr., is stable. Neither the

alcoholic nor the aqueous solution is altered by the addition of nitrate of silver or weak acids. On the other hand, the caustic alkalies readily decompose it, the alkaline carbonates more slowly. As a consequence chloralamide cannot be given in alkaline solutions, but may be administered in weak acidulated ones.

Since its introduction as a **Hypnotic,** the reports respecting its action have been exceedingly numerous, but the evidence is very conflicting. Dr. Karl Schaffe states that in fifteen cases of progressive paralysis, he found that it produced satisfactory sleep where simply insomnia was complained of. Where there was a slight degree of excitement, in doses of from 60 to 75 grains it produced a quieting effect, though *where the excitement was more marked it produced no effect*, and failed in doses of 60 grains where 45 grains of chloral were perfectly efficacious.

In five cases of mania its action was unsatisfactory when administered in doses of 75 grains, as was also the case in five cases of insanity accompanied by hallucinations. Sometimes it caused severe headache, loss of appetite, and nausea, and it was never active when the sleeplessness was due to pain.

Drs. A. Robinson and Fürbringer found it fail in 46 per cent. of the cases when it was tried for insomnia. When given to subdue pain it succeeded in only 10 per cent. of the cases. Their opinion is altogether unfavourable to its use both in respect to certainty of action, and as regards its after effects. It was claimed for the drug that it had no disturbing action on the heart, but the results of Fürbringer distinctly negative this claim. Neither is it free from the production of gastric disturbance, for both in Dr. Schaffe's and Dr. Fürbringer's cases, this was not unfrequently complained of.

Dr. Halasz states from his experiments on dogs that it had no disturbing after effect upon the circulation. Dr. Langgaard, however, finds that when given to animals it produced decided reduction of the blood-pressure, and he considers its employment dangerous in heart disease.

Dr. Halasz did not find satisfactory clinical results either as regards certainty of action or freedom from after effects.

Prof. Rabon claims that it is quicker in its action than sulphonal, while it is free from the prolonged after-working of that drug.

Comparing chloralamide with chloral, Drs. Hager and Hüffler prefer chloralamide on account of its freedom from taste, greater efficiency in producing sleep, and absence of dangerous or disagreeable after-effects, although in some cases a slight headache remained on awakening from sleep. The chloralamide seemed incapable of subduing pain,

although in cases of **Cardiac Asthma** it seemed to act almost as a specific.

Dr. Reichmann also reports favourably and mentions a case of **Biliary Colic** in which it caused sleep in spite of severe pain.

Dr. W. Hale White records twenty cases of **Insomnia** in which it was employed with only two failures. Some of these patients were victims to painful disease, and they preferred it to morphine or the ordinary hypnotics. He found no ill effects follow its too great variation in the time before its effects were felt. This he partly attributed to delayed absorption owing to the way it was administered. He now always gives it dissolved in spirit, 20 grains being soluble in 1 drachm in the course of fifteen minutes, and this solution is not precipitated by the addition of water.

Dr. D. R. Patterson, who has used this drug in **Phthisis, Heart Disease,** and **Enteric Fever,** to relieve the insomnia, finds that in phthisis it not only causes sleep but relieves the night sweats. He found no depressing action on the circulation as in the case of chloral, and that the digestive functions were unimpaired. His results were favourable to the efficiency of the drug.

Dr. Chapin, of New York, in a more recent report, says: "The cases in which I have used chloralamide have been mostly those of insomnia of a very persistent character, in some of which all other hypnotics had failed. Although my experience with the drug has been confined mostly to one class of cases—those of insomnia depending on some nervous affection—I have seen enough of its action to convince me that not only does it fail to possess all the virtues attributed to it, but, owing to its uncertain action and the many unpleasant symptoms which it produces, it is inferior to most of the other new hypnotics.

"It is maintained that chloralamide has no effect on the respiration or circulation, and can be given in cardiac cases almost with impunity. In doses under 3 grammes I believe chloralamide to be harmless; but when given in larger doses it will produce effects on the circulatory and respiratory systems that are ominous of what may happen if it is not used with caution.

"Its action as a hypnotic is very uncertain, taking effect in some cases in a very few minutes, while in others its action is delayed for several hours, or else has no effect at all. Sulphonal, to which it is claimed to be superior, is uncertain in its action, but can usually be relied on in certain cases, while chloralamide can not be depended upon to act twice alike on the same patient.

"In some cases it appears to be accumulative, especially if given in

its undissolved form, and I have known a second dose to have such a depressing effect on the heart as to render stimulants necessary. If 4 grammes fail to produce sleep, it is useless to repeat the dose.

"Although in some cases it causes a refreshing sleep, with no unpleasant after-effects, yet just as often does it cause headache, which is sometimes very distressing, nausea, great restlessness, or depression. I find these unpleasant symptoms almost invariably occur when its administration fails to produce sleep."

Dr. Peiper appears to prefer it to chloral in simple insomnia from nervous affections. He has successfully used it by means of an enema. The average dose given is 30 to 45 grains.

REFERENCES.—"Central. für Nervenheilkunde," No. 22, 1889; "Zeit. für Therap.," Dec. 15, 1889; Central für die Ges. Therap.," Dec. 5, 1889; "Wein. Med. Blätt.," Aug. 1, 1889; "Pharm. Post." Aug. 8, 1889; "Deut. Med. Woch.," Aug. 1, 1889; Ibid., Aug. 8, 1889; "Ther. Gaz.," Sep. 15, 1889; "Brit. Med. Jour.," Dec. 14, 1889; "Lancet," Oct. 26, 1889; "New York Med. Jour.," Aug. 9, 1890.

CHLORALIMIDE.

This substance is likely to be confounded with the above, *Chloralamide*. It was first described by Messrs. Pinner and Fuchs, who obtained it by the action of ammonium acetate upon chloral hydrate, but Messrs. Behal and Choay now claim that it can be obtained in a state of greater purity as a residue from the action of heat upon chloral ammonia. The product so obtained is described as forming long colourless and tasteless needles, slightly soluble in water, rather soluble in alcohol, and very soluble in ether. It is very stable, not being altered by air, light, or moisture, or by heating in a sealed tube to 150° C. in the presence of water; but at 180° it is said to be decomposed into chloroform and formamide. It is stated that, in doses of 4 to 8 grains, chloralimide possesses remarkable **Antipyretic** and **Analgesic** properties. M. Choay also claims that it would surpass chloral ammonia or chloral formamide in activity, since an equal weight would yield more chloroform than either, while it presents the advantage of being stable and free from unpleasant taste and odour.

REFERENCES.—"Berichte," x. 1068; "Repertoire," Mar. 10, 1890; "Pharm. Zeit.," Mar. 15, 1890; "Pharm. Jour.," Mar. 29, 1890.

CONCILLANA (Sycocarpus Rusbyi).

An account of the experiments made by Dr. Rusby on the physiological action of this drug was given in the "Annual," 1889, p. 33. The result of a full dose given to three persons closely resembled in effect that of a similar dose of Ipecacuanha. For medicinal purposes

the bark is employed, the odour of which is slight but peculiar, and the taste unpleasant (not bitter) and slightly nauseous. Prof. Schrenk, who has examined the bark both chemically and microscopically, finds, among other peculiar elements in its structure, certain cells containing large monoclinic crystals of oxalate of calcium, and many of the elongated parenchyma cells of the liber almost entirely filled with a yellowish-white, amorphous, sometimes slightly granular substance. After a careful chemical examination of the latter substance, he suggests that it might be considered a kind of latex related to the resinous secretions furnishing gutta-percha and caoutchouc. It is possible that some active principle is contained in this latex analogous to opium, euphorbium, etc.

Dr. L. H. Mettler, in a recent communication to the "New York Medical Journal," April 5, 1890, records a series of cases of broncho-pneumonia, and phthisis, in which he has used this drug, and he draws the following conclusions in respect to its action: "In its first effect concillana seems to be a stimulant expectorant, for the cough, from our observation, has always been increased somewhat at first, as well as expectoration. But as its action continues it becomes a sedative, and by over-stimulation diminishes the expectoration. This is shown clinically as well as by physiological experiment. Though it acts upon the alimentary mucous membrane, causing emesis and catharsis, when administered in high dosage, this does not interfere with its employment as an expectorant, since the dose necessary for the latter purpose is quite below that required to produce marked nausea and diarrhœa. Its occasional mild cathartic action when administered for its expectorant effects is highly advantageous, and nausea need not be feared unless injudicious dosage be employed.

"We have noticed a feeling of weakness and depression occasionally following the use of full doses. This, together with the fact that it is a stimulant, particularly in the form of the tincture, leads us to contra-indicate it in phthisis and all those pulmonary affections having associated with them marked emaciation and debility. In the acute affections of the air-passages concillana should never be employed in the earlier stages when the mucous membranes are engorged and the cough is merely of an irritative sort without expectoration. As soon, however, as the period of exudation arrives, usually from a week to two weeks after the subsidence of the acute inflammatory symptoms—in a word, when the trouble is about becoming subacute, the use of full doses of the drug will give the happiest results. In the **Chronic Forms of Bronchitis**, when there is an expectoration that is scanty, thick, and tenacious, the best results have been secured and positive

cures obtained. In capillary bronchitis and in the chronic forms of broncho-pneumonia, concillana fails to give uniform relief, and for these we still retain our preference for the ammonia salts."

Dose, 10 to 15 drops of the fluid extract every three or four hours.

CORONILLA SCORPIODES.

This plant belongs to the Papillionaceæ and grows freely in southern France.

Attention was called to it in 1886 by Dr. Cardot. Recently Schlagdenhauffen and Reeb have isolated an alkaloid, which they call coronillin.

Clinical experiments made by Dr. Spillman with this alkaloid tend to show that it acts but feebly on the number and rhythm of the cardiac pulsations, but produces an increase in the amplitude of the pulse and augmentation of the diuresis, and diminution of œdema and improvement in the respiration.

Its effect, however, appeared to be very transient. The dose given was 3 to 5 grains, although former physiological experiments determined $\frac{1}{5}$ gram to be a poisonous dose.

CREOLIN.

This substance was fully described in our last issue. Dr. J. Wackez reports that out of seventeen cases of lacerated and incised wounds to which he applied it, seven more or less severe cases of eczema occurred, although it was used only in the proportion of 1 in 1000. On the second day after application they became markedly reddened, almost resembling an eruption of scarlatina, with severe itching. On the third day numerous vesicles formed, filled with clear fluid, and attained the size of from a quarter to half a dollar. The temperature was elevated, the neighbouring lymphatic glands swollen, with loss of appetite, headache, and frequent vomiting. On the third day after the vesicles had been emptied, either spontaneously or artificially,—a process which is accompanied by the profuse excretion of serum,—the epidermis peeled off in large flakes, and a condition similar to that of a burn of the second degree resulted. From the scratching, which was the consequence of the severe itching, other parts of the body were likewise affected, and vesicles appeared on the face or hand, as a consequence of contact with the effused serum. An examination of the urine showed that phenol was being eliminated, which demonstrated that the disturbance of health which accompanied the eczema was not wholly due to local cause.

Dr. Jessner considers that a 3 per cent. solution of creolin is equal to a 5 per cent. carbolic solution in antiseptic value. It mixes with water when simply stirred. It certainly forms no solution, but a complete

and regular emulsion, which can be, therefore, made at any moment without any preparation. Creolin is not volatile. Above all, it is not poisonous in the quantities required for treatment of the human body. All experiments have proved this. He thinks, therefore, that it has a rich field as an antiseptic for internal use. If an accident can at all happen, Jessner can imagine it possible only when a too strong concentration is introduced directly into the circulation. He claims that it has no corrosive action on either the skin, or mucous membrane, even when used undiluted, a statement which must be read in the light of the foregoing report. It does not injure instruments except when made of indiarubber, *e.g.*, elastic catheters; these it spoils after prolonged use. Dr. Jessner's description is written in a very eulogistic vein; but cases where large quantities of creolin have been taken by accident or with suicidal intent serve to show that its toxic properties are not very great.

REFERENCES.—"Therap. Monats.," June, 1887; "Med. Annual," 1890, p. 24; "Deut. Med. Zeit,," June, 1889; "Lond. Med. Record.," Aug. 20th, 1889.

DIOSCOREA VILLOSA.

This plant is known in America as Wild Yam or Colic Root, the latter name indicating the medicinal virtue popularly attributed to it. The root somewhat resembles the edible yam of the West Indies, but it is hard and woody.

Dr. Thomas Woodson states that he was induced to try it owing to its successful use by an "irregular" physician for the relief of **Biliary Colic**, and his trials were attended by striking relief to his patients. The dose used appears to have been 10 drops of the fluid extract every hour until relief was obtained, and during the interim three times a day. This drug was tested some years ago by Dr. Burt, Nichol and Cushing, who took it in various doses, and watched the result. In all it caused abdominal pain of the character of colic, and also some disturbance of the cerebral functions.

Dr. Hale says, "I am inclined to think that its sphere of action embraces the spinal cord and the reflex nervous system (generally), the umbilical plexus of nerves (specially), and by exalting the reflex excitability of the spinal cord, it causes pains in portions of the body remote from the seat of the primary irritation."

The clinical indication for the use of this drug is said to be "a constant pain, aggravated at regular intervals by paroxysms of intense suffering; this pain commences at the umbilicus, and is gradually diffused all over the abdomen, and is often attended by vomiting, retching, furred tongue, and distension of the abdomen.

Headaches, Renal Colic, accompanied by this paroxysmal pain have also been relieved by this remedy, which appears to have analgesic properties in pains of this character, rather than to possess any specific action upon the biliary functions, as its popular use for biliary colic would at first lead one to suppose. It is a remedy well worthy of further investigation.

REFERENCE.—"Med. Bullet.," July, 1890.

DIURETIN.

Under this name a sodio-salicylic compound of theobromine, corresponding to one of the so-called soluble salts of caffeine, has been introduced as an advantageous diuretic. According to Dr. Gram, of Copenhagen, theobromine is a **Diuretic,** acting directly upon the kidneys, differing from caffeine in not affecting the central nervous system, and therefore not causing sleeplessness and restlessness. It is said to have produced satisfactory diuresis in cases of **Renal** and **Heart Disease** in which digitalis and strophanthus have been used without effect. But as the free alkaloid requires about 1600 parts of water for its solution it is not readily absorbed, and gives rise to disturbance of the stomach. Diuretin, on the other hand, is alleged to produce the beneficial effects of theobromine without the unpleasant symptoms. It is described as occurring as a white powder containing 50 per cent. of theobromine, dissolving with the aid of heat in less than half its weight of water, and remaining in solution after the liquid has cooled. It is administered to the extent of about 6 grammes daily in 1 gramme doses.

REFERENCE.—"Apot.-Zeit.," Dec. 14, p. 1338.

ESERIDIN.

This is obtained from physostigmine by treating it with iodic acid. Eber, its discoverer, states that it is less poisonous than physostigmine. Experiments have been performed on animals by Dr. Eber and by Ostertag.

According to the size of the dose, there is first excitement, then progressive paralysis of the brain and the medulla oblongata, the vomiting and respiratory centres and cardio-inhibitory centre being successively disturbed. The temperature and voluntary muscles were not affected ; while at first there is increase of blood-pressure, coinciding with reduction in the frequency of the pulse, later the conditions as regards the circulation are exactly reversed. From irritation of the pneumogastric centre there is marked increase of the peristalsis of the stomach and the intestine, accompanied by at first normal and subsequently watery discharges, with evidences of nausea or even

actual vomiting. The excretion of eseridin in the intestine produces direct irritation of the nerve plexus of the bowels, and so leads to peristalsis and secretion of mucus.

It is recommended by Dr. Eber as particularly useful in veterinary practice as a stimulant to the brain and spinal cord, stomach and intestines. He gave doses as follows : horse, 1½ grains ; cow, 3 grains ; dogs and cats, $\frac{1}{10}$ grain, for every two pounds of body-weight. It is contraindicated in all diseases of the brain or spinal cord, and in parenchymatous disturbance of the heart. Its action is not cumulative like strychnine. In Dr. Ostertag's experiments, 3 to 4 grains produced increased peristalsis, but 7½ grains were required to produce diarrhœa, as compared with 12 grains of physostigmine, but this dose caused salivation, coughing, and disturbance of the circulatory organs. Schweber, of Prof. Kobert's Pharmacological Institute at Dorpat, after a series of experiments, concludes that eseridin possesses no advantages over eserine. The chief drawback to both, and equally shared by them, detracting in fact from the usefulness of the calabar alkaloids generally, is the ready susceptibility of the heart to their action. In short, the assertion that eseridin is free from the toxic action of eserine is erroneous.

REFERENCES.—"Deut. Med. Zeit.," Dec. 9, 1889 ; "Berlin. Tier. Woch" ; "Merck's Bulletin."

ETHOXYCAFFEINE.

This is made, according to Dr. Thomas, by treating caffeine with a large excess of bromine, added gradually in small quantities, the mixture being kept cool, and then adding to an alcoholic solution of the resulting monobromcaffeine, freed from excess of bromine, metallic sodium in small fragments sufficient to combine with the bromine, and boiling. Upon concentration of the alcoholic solution the ethoxycaffeine separates in small white needles, that can be purified by recrystallization from alcohol or water. The melting-point of the crystals is 138° C. It has been recommended in 4-grain doses as a remedy for **Migraine.**

REFERENCE.—"Pharmaceutische Post," April 13, 1890.

EUPHORBIA PILULIFERA

Attention has been redirected to the value of this plant in the treatment of **Hay Asthma** and **Coryza** by Dr. Rosecrans Workman, who states that he has notes of twenty-seven cases in which the drug was given. In thirteen cases of hay asthma prompt relief was obtained in nine. The sneezing and discharge were diminished or stopped, and the congested sensation relieved. In one of the other cases partial relief was obtained, and in the remaining three cases the results were negative.

The fluid extract was administered in doses of 30 to 60 minims every four hours. In nearly all of the above cases iodide of potassium and arsenic had been previously used.

In nine cases of **Coryza** good results were obtained in six, the sneezing and rhinal flow ceasing or diminishing within thirty-six hours after the administration of the drug was begun. The doses were repeated every three or four hours.

In five cases of **Asthma**, of frequent recurrence and long standing, marked relief was experienced in one case, the dyspnœa soon disappeared, and the attacks were always shortened. In the other four cases no good effects were obtained.

The preparation and doses are: Decoction (1 to 40), dose, 2 ounces twice daily; aqueous extract, dose, ½ to 1½ grain; tincture (B.P.C.) 1 to 5 proof spirit, dose, 10 to 30 minims; fluid extract, 20 to 60 minims.

REFERENCE.—"Therapeut. Gazette," July 15, 1890.

EUPHRASIA OFFICINALIS.

If we may accept the poet Milton as an authority, the earliest recorded use of this remedy was when it was used by the Archangel to clear the vision of our first parent.

> ". . . purged with euphrasy and rue
> The visual nerve, for he had much to see."

Its reputation for the cure of eye affections is denoted by its name "eye-bright," "casse-lunettes," "augen-trost."

Culpepper speaks of it enthusiastically. "If the herb was but as much used as it is neglected, it would half-spoil the spectacle maker's trade." But so far back as 1753 we find its use abandoned by the general body of the profession. The new Dispensatory of that date tells us that "At present it is totally and justly disregarded."

Dr. Richard Hughes says, "The great charm of euphrasia as a medicine is that it has a distinct and limited sphere of action, beyond which it advances no pretensions, but within which it manifests virtues which are as unvarying as they are potent. It acts upon the upper portion of the respiratory mucous membrane, *i.e.*, upon its conjunctival and nasal portions, only just reaching the larynx. It develops in this region a catarrhal inflammation generally characterized by profuse secretion. Hence it takes a first place among the remedies for **Fluent Coryza** when this is a local affection and not a symptom of general influenza. The coryza which accompanies the commencement of measles is one to which euphrasia is well suited."

This opinion is very much in accord with that advanced by Dr. G. M. Garland, who publishes four cases of coryza in which

various remedies had failed to produce any relief, but in which tincture of euphrasia, in doses of 10 drops, gave surprising relief. It seemed to have been especially efficacious in aborting coryza. When administered at the very onset of the attack, it is claimed to entirely arrest the flow of the mucus from the nose; in the later stages, when the nasal discharges had advanced to a purulent or muco-purulent condition, he has had no success with it. In addition, Dr. Garland writes that he has had surprising success in the treatment of infants with euphrasia officinalis. A few drops of the tincture in a little water, given to a child *ad libitum*, will give prompt relief without disturbing the digestion; as it has an aromatic taste and pleasant odour, it is readily taken.

It appears probable that the action of this drug on the eye will be found to be confined to catarrhal conditions of the mucous membrane, although Drs. Allen and Norton say that they have used it with good results in paralysis of the oculo-motor nerve, coming on after exposure to cold and wet.

REFERENCES.—"Pharmacodynamics," 1880; "Boston Med. and Surg. Jour.," Nov. 7, 1889.

EXALGINE.

Further contributions to the study of this drug have been made since the publication of our last issue. Dr. Binet finds from experiments upon animals that it produces local paralysis in the muscles which are the seat of the injection, arrests the heart, diminishes oxyhæmoglobin, and interferes with the oxygenation of the blood. Its antithermic action is quite as marked as that of acetanilide. In mammals its action differs considerably from anilide and methylformanilide. In subcutaneous injections it produces within one or two minutes clonic epileptiform convulsions, with profuse salivation, the attacks of convulsions being separated by periods of relapse, in which there is more or less cyanosis, difficulty of breathing, and agitation. The convulsions so produced, it is stated, may be arrested by inhalations of ether. The convulsions are of cerebral origin, but there is also a certain degree of excitation of the spinal cord. The temperature is rapidly reduced by the injection, the reduction appearing within ten minutes after subcutaneous injection, and attaining its maximum in about three-quarters to an hour later. It generally amounts to 2° or 3° C. with medium doses, but with poisonous doses may amount to 10°. This reduction of temperature, likewise follows its internal administration, or its use through rectal injection. Small doses produce slight increase of blood-pressure, the pneumogastric nerve preserving its irritability. Death is produced in mammals by interference with oxygenation of the blood, which, after

death, is dark prune coloured, and shows the presence of abundance of methylhæmoglobin. The urine never contains blood but preserves its its amber colour.

Prof. Fraser, of Edinburgh, has reported numerous trials of this drug. It was administered on eighty-eight separate occasions; in sixty-seven cases pain was relieved, in twenty-one no distinct benefit was gained. The condition of some of the patients, however, was not one in which the pain that existed was likely to be removed by any substance that did not produce general narcotism, as for example, cancer, aneurysm, abscess. The best results, undoubtedly, were obtained in **Neuralgia.** In fifty-two administrations forty-eight were successful, and four unsuccessful. Allowing for fallacies in estimating therapeutic effects where reliance has almost solely to be placed on the statements of patients, these results are satisfactory, and justify the hope that exalgine may take a useful and important place among the remedies by which pain is relieved. Its analgesic power is not very powerful, but it has the enormous advantages of being free from the inconveniences or dangers associated with the action of nearly all other pain-subduing agents.

Dr. Fraser records a case of severe **Sciatica** in which this drug proved a valuable palliative to the pain. He generally gives it in the small dose of ½ grain; but 1, 2, and 4 grain doses were also administered. The largest quantity given in twenty-four hours was 14 grains, and no disagreeable, much less dangerous effect was produced by this quantity.

Dr. Alexander Pope, after describing several cases in which he employed it, concludes as follows: "That exalgine acts favourably in some cases where antipyrin and phenacetin have failed or for some reason are contraindicated. That the initial dose should not exceed 5 grains, and that care should be exercised in repeating the dose. That it probably possesses a certain degree of hypnotic power. That it may cause symptoms resembling angina pectoris. That it is expensive, which is an objection, at least in dispensary practice. That its most useful sphere of action thus far developed is in the treatment of pain. That it has the advantage of not causing irritation of the stomach, rash, cyanosis, etc., so often seen after the use of antipyrin or acetanilid.

The value placed upon this remedy as an analgesic by Prof. Dujardin-Beaumetz is mentioned in the introduction to this section.

Exalgine is best ordered in alcoholic solution. It may be given in powder or a solution flavoured with some aromatic. The solution recommended by Bardet is as follows:—

℞ Exalgine 5j | Rum, Water, āā 5iij

M. Sig. Tablespoonful in water every four hours, if necessary.

REFERENCES.—"Annual," 1890, p. 26; "Nouv. Rem.," June 8, 1889; "Practitioner," xliii. p. 295; "New York Med. Jour.," Feb. 22, 1890.

GURJUN BALSAM.

Dr. Murrell, in a communication to the "Lancet" (May 3, p. 962), recommends gurjun oil as an expectorant in **Bronchitis.** He states that it does not cause the rash, attended with intense itching, which follows the use of copaiba in a large number of cases. He prescribes it in doses of 2 drachms, with 1 ounce of extract of malt three times a day.

Gurjun Balsam, or Wood Oil, Balsamum Dipterocarpi, was introduced by Mr. Chas. Lowe, of Manchester, in 1854, as "a new variety of balsam of copaiba derived from the East Indies." Its action on the mucous membrane is probably similar to the various turpentines which it closely resembles in composition.

It may be used in the form of emulsion, the ordinary dose being 15 to 40 drops, or 10 to 30 drops if the volatile oil is employed.

HYDRACETIN.

This is the name given to pure acetylphenylhydrasin. It occurs as a crystalline powder, white, tasteless, and almost odourless. It is freely soluble in alcohol and in 1 to 50 of water. It is a strong reducing agent.

According to Dr. Guttmann, hydracetin exercises a powerfully antipyretic action in relatively small doses, and is also effective in relieving **Rheumatism of the Joints.** The doses given ranged from 5 to 20 centigrammes in the day, and in only a few cases to 30 centigrammes; the dose recommended is 10 centigrammes, given in two doses of 5 centigrammes daily. It is expressly stated, however, that its internal administration must be cautiously conducted, and must not be continuous.

Dr. E. Basch has carried out some observations on the use of hydracetin in skin diseases, and finds that it is decidedly poisonous, even when applied externally. In a case of general psoriasis, where a 10 per cent. ointment was applied to a third of the surface of the body, after ten days' treatment the skin and mucous membranes became quite pale, and though the hydracetin was then stopped hæmoglobinuria and jaundice supervened. The pulse became very rapid, but notwithstanding the constitutional action of the drug the psoriasis was not benefited. Dr. Basch finds that hydracetin, though a powerful reducing agent, and useful in small patches and limited areas of psoriasis, has by no means the specific effect that pyrogallol and chrysarobin seem to possess.

REFERENCES.—"Pharm. Centrablt.," May 16 and 30, 1889; "Pharm. Jour.," June 29, 1889; "Therap. Gazette," August 15, 1889.

HYDRASTIS (Golden Seal).

Dr. Edmund Falk has produced a new alkaloid, to which he has given the name of hydrastinine, by heating a mixture of hydrastine and nitric acid, and precipitating with an alkali. Its formula is $C_{11}H_{13}NO_3$. It is perfectly white, and contains a molecule of water of crystallization, but its salts are free from it and most of them are readily soluble in water. The physiological action of the drug differs, it is said, very materially from that of hydrastine. It is not a spinal irritant, and is a heart stimulant instead of a paralyzer of that organ; it also sustains persistent contractility of the vascular system without the paralysis which has been known to follow the use of hydrastine. Dr. Falk has made repeated demonstrations with hydrastinine, and suggests it as a remedy in the treatment of **Uterine Hæmorrhages** as being much more prompt and sustained in its action than ergotine. Report is made of twenty-six cases systematically and successfully treated with it. The twenty-six patients received in all four hundred injections of hydrastinine hydrochloride in the form of a solution varying from 5 to 10 per cent.. There was no noticeable local irritation following these injections at any time. The patients were unanimous as to the painlessness of the applications and the freedom from that subsequent discomfort which so often arises from the use of ergotine.

Since Schatz in 1883 recommended hydrastis in **Uterine Hæmorrhage** many articles have appeared attesting its value also in **Uterine Myoma**, and in **Congestive Dysmenorrhœa**. It has also been used for **Gastric Catarrh**, and as a local application in **Chronic Pharyngitis**.

Dr. Franz Jordan relates an interesting case of most obstinate membranous **Dysmenorrhœa** in which after many years had been spent in trying all manner of different methods of treatment hydrastis canadensis rapidly effected a cure. Dr. Jordan employed the liquid extract of hydrastis canadensis, 25 drops of which he ordered twice a day. This very soon began to produce an appreciable effect, and after a short time the medicine was required only at the time of menstruation, or for a few days previously, the loss of blood becoming very slight, and the pain disappearing altogether.

Dr. Marfori has recently published a series of researches respecting the physiological action of hydrastine, berberine, and other derivatives of hydrastis, an abstract of which will be found in the "Therapeutic Gazette," July 15, 1890. His results confirm those of clinical experience that in hydrastis canadensis we have a remedy which possesses great value as a hæmostatic. He concludes that hydrastinine,

while possessing most of the physiological properties of hydrastine, is less efficacious in its vaso-constrictive influence and in its action on the intravascular pressure.

Hydroberberine, whose molecule contains four atoms of hydrogen more than the molecule of berberine, differs likewise from the latter in its physiological properties. It produces a depression in blood pressure, even in animals in whom the pneumogastric nerves have been divided; but it does not produce an increase in blood-pressure when a division of the spinal cord is made below the medulla oblongata. This fact appears to prove that the elevation of the blood-pressure due to its action is attributable to stimulation of the medullary vaso-motor centres.

Opianic acid is another product of the oxidation of hydrastine, but it produces no appreciable physiological effects in comparatively large doses, either in frogs or in warm-blooded animals. It nevertheless possesses considerable action in preventing putrefaction.

Hydrastinic acid and berberinic acid, also products of oxidation of hydrastine and of berberine, have likewise given analogous results.

REFERENCES.—"Archiv. für Experimentelle Pathologie und Pharmakologie;" "Gaz. Médicale de Paris," June 7, 1890.

HYDROQUINONE (Hydrochinon).

Hydroquinone, which is now extensively used as a developing agent in photography, was introduced by Briege in 1877 as an **Antipyretic.** It is obtained as a derivating coal tar, and is neutral and inodorous, with a sweetish taste. Its solubility in water is 1 to 20.

Dr. Gactano Traversa has recently made a series of experiments relative to its antipyretic powers. His results show that: (1,) It has an influence both on physiological and pathological temperature, although in healthy individuals the lowering of temperature is much less marked than that which follows the administration of the same dose to fever patients; (2,) The reduction of temperature results from thirty to forty minutes after the administration of the remedy, and reaches its maximum from one hour to one hour and a half afterwards; (3,) The antipyretic action is not ordinarily accompanied by any disagreeable symptoms, though sometimes doses of 6 to 11 grains, frequently repeated, are followed by abundant sweatings, chills, and when the antipyretic effect passes off the temperature rapidly increases; (4,) The blood-pressure does not appear to be sensibly modified unless the doses are extremely large and frequently repeated, when the reduction of temperature is accompanied by a slowing of the pulse, especially in febrile cases, and the blood-pressure is considerably reduced.

The dose usually employed is ½ to 5 grains.

REFERENCE.—"La France Médicale," May 16, 1890.

HYDROXYLAMIN.

This substance may be considered as an ammonia, in which one atom of hydrogen is replaced by hydroxyl. It was discovered by W. Lossen in 1865.

Hydrochloric hydroxylamin, or hydroxylammonia chloride, is its most important salt (NH_2OHHCl).

It appears in colourless crystals, which are very hygroscopic, and freely soluble, both in water, alcohol, and glycerine.

It is prepared in various ways according to Maumene by the action of hydrochloric acid and tin in a solution of nitrate of ammonia.

In our last issue we mentioned its use by Dr. P. J. Eichoff in various skin diseases, such as **Lupus, Ringworm, Parasitic Sycosis,** and his suggestion that it may prove useful in **Psoriasis, Parasitic Eczema,** and even in **Lepra** and **Syphilis.**

Dr. Fabry records his results with this remedy in the treatment of **Psoriasis.** He employs either an alcoholic solution, such as :—

℞ Hydroxylamin Muriat.	·2 to ·5	Calc. Carbon.	q.s. ad neutr.
Spir. Vini	100		

This is applied with a brush ; or a watery solution of 1 to 1000 is used as a compress.

As in other applications, the scales are to be first removed by bathing, rubbing with green soap, and applications of 10 per cent. zinc salve. As this new substance has decided toxic properties, the 1 to 1000 or 1 to 500 neutralized solution is used in the beginning, and the stronger applications, up to ½ per cent., are gradually employed, being painted on the diseased areas twice daily. A cloth wet in the solution, or a Priessnitz band, can be applied every two hours to suitable parts. As is the case with pyrogallol, chrysarobin, and some other substances, albumen may appear in the urine as a consequence of absorption of the drug. So far as a radical cure of psoriasis is concerned, hydroxylamin promises no more than the substances now used as external applications, recurrences appearing to be quite as frequent as after older methods. The features of this new remedy which recommend it are its cheapness, the fact that it does not stain the clothing, and does not produce dermatitis of the healthy skin in the way chrysarobin and pyrogallol do, while being quite as active an agent in removing the lesions of psoriasis. So that the author does not hesitate to advise its use in this disease.

So far as the length of treatment required to remove the lesions is concerned, it appears that the action is not more rapid than that of

chrysarobin, a four to six weeks' course being necessary. In the degree of effect produced, it does not fall behind that of other reducing agents now in use, but its effects upon the system must be watched. In some patients, so much pain from the stronger applications is complained of, that other means have to be substituted or the treatment intermitted.

REFERENCES.—"Med. Annual," p. 29, 1890; "Archiv. für Dermatologie und Syphilis," Heft 2, 1889.

HYPNAL.

Herr Reuter showed that by heating antipyrin with chloral hydrate a crystalline compound could be obtained, which he described as trichloraldehydphenyldimethylpyrazol, and alleged to be without therapeutic value. According, however, to the experience of Dr. Bardet, this crystalline compound, which he proposes to call "hypnal," partakes in a marked degree of the properties of both its constituents. Administered in twenty-two cases in doses of 1 gramme (2 grammes being rarely required) he found hypnal to induce sleep as readily as chloral hydrate, whilst in those instances where the insomnia was caused by pain it seemed to have the same anodyne effect as antipyrin. In addition, spasmodic symptoms, especially **Cough,** appeared to be much abated under its influence. Dr. Bardet states that hypnal consists of about 45 per cent. of chloral and 55 per cent. of antipyrin. It has been found by M. Bonnet that if concentrated solutions of the two constituents be shaken together, a considerable deposit of crystals is formed without passing through the oily stage, and this deposit, by recrystallization from water, can be obtained in enormous transparent rhombic crystals. If the chloral used be in excess the crystals take the form of prismatic needles. The compound is said to be free from odour or caustic taste. In fact, according to M. Bonnet, it is tasteless; but Dr. Bardet says that while it is free from the strong taste of chloral hydrate and the bitterness of antipyrin it has a saline taste, a slight but not disagreeable sensation of chloral becoming imperceptible on the tongue after some time.

REFERENCE.—"Nouv. Rem.," p. 135, March 24, 1890.

KOLA NUT.

Many articles have appeared in the medical and lay press relative to the virtues of kola nut. Good samples of this nut are known to contain 2·5 per cent. of caffeine, and any powers it may possess of preventing fatigue and stimulating the nervous system are admitted to be due to the action of this salt. It is less palatable than coffee, and at present far more expensive; and the suggestion that it shall be used

as part of the soldiers' rations, made by Dr. Heckel, of Marseilles, is one which we hope will not be adopted. Recent researches on the physiological action of caffeine (see article "Caffeine") do not tend to prove that its stimulating properties economize the physiological powers, and the fact that for every 2 grains of caffeine obtained by masticating kola nut, 15 grains of tannin have to be swallowed makes it reasonable to suppose that its regular use would result in digestive derangements and functional heart trouble. There is a commercial side to the recently revived interest in kola nut.

LACTOSE (Sugar of Milk).

We must add this simple body to the list of active **Diuretics.**

Under the direction of Prof. Dujardin-Beaumetz, Dr. J. Meilach has made a series of experiments which show that both lactose and glucose are active diuretics, and belong to the class of direct renal diuretics, because when the substances are injected into the veins of animals there is no increase of blood-pressure, or in administering to man there is no corresponding modification in the pulse. Further, it is claimed that diuresis may be produced without either the lactose or the glucose passing into the urine. They are destroyed in the organism, and, therefore, in addition to possessing diuretic properties, and thus acting as a medicament, they are to be regarded as foods. Neither form of sugar produces any nervous disturbance, and to this extent is preferable to caffeine. Further, Dr. Meilach claims that the diuresis resulting from these substances is greater than the amount of liquid drank, therefore that they produce a dehydration of the blood, and to that extent render it more apt of resorption. The author has found that the diuresis reaches its maximum in dropsies of cardiac, or even of cardio-vascular origin, when the urine is free from albumen. When the urine is albuminous, diuresis is produced, but not to so marked a degree as when albumen is absent. Lactose, in doses of a little over 3 ounces, dissolved in two quarts of water, produced marked diuresis, while 6 ounces of a 75 per cent. syrup of glucose will produce the maximum effect.

He believes that the efficacy of the grape-cure is largely attributable to the diuretic effects of the glucose contained in the grape.

Zadvadsky has published a case which fully confirms the above views. It was that of a man, with fatty heart, with arterial sclerosis and ascites. Digitalis had produced but slight result, while lactose, in doses of from 3 drachms to 4½ drachms daily, produced threefold increase in the quantity of urine secreted in twenty-four hours. The author specially calls attention to the diuretic action of milk-sugar, in doses of only one-fifth of the dose recommended by French observers,

and, contrary to the assertions of Sée, calls attention to the fact that the simultaneous administration of milk, soup, or other liquid foods, does not interfere with the diuretic action of lactose. He even believes it is attributable to the milk, which contains a large quantity of milk-sugar, that he has obtained such marked results with such small doses of sugar.

REFERENCE.—"Les Nouveaux Remèdes," Jan. 8, 1890.

LIPANIN.

This substitute for cod-liver oil has been lately extensively tried at the Children's Hospital, Vienna, and the results appear to have been very satisfactory, as it not only caused increase of weight but also of appetite, and no gastric derangement followed its use.

It was flavoured with an essential oil, or syrup aurantii. It is still an expensive drug, the dose required being 1 tea-spoonful twice or three times a day.

LOBELINE.

The only active principle of lobelia inflata has recently been investigated by Dr. H. Dresser.

Warm-blooded animals poisoned by means of lobeline succumb to respiratory paralysis, so it is to be included among the respiratory poisons. In dogs the physiological action of lobeline is first manifested by a paralysis of the voluntary movements and by a concomitant exaggeration of the reflexes. Later these effects are complicated by a paralysis of the motor nerves, analogous to that produced by curare. Through its paralyzing action on the cardiac branch of the pneumogastric, lobeline resembles in its action the nicotine group. In warm-blooded animals the influence of lobeline is found in a great exaltation of the respiratory activity. It produces an acceleration of the respiratory movement, which is more persistent when the pneumogastric nerves are intact than when they have been divided. Further, the amplitude of the respiratory movements is increased, and the power of the respiratory muscles appears to be also augmented. Under the influence of comparatively small doses of lobeline the inhibitory influence of the pneumogastric on the heart, as well as its action on the bronchial muscles, is suppressed. The respiratory muscles appear to receive especial stimulation from the respiratory centre when the latter is under the influence of lobeline ; as a result, the work accomplished by the heart and respiratory muscles is greatly augmented. In comparison with the other agents which stimulate the respiratory functions, lobeline possesses the advantage over hydrocyanic acid in its freedom from depressing action, while it surpasses aspidospermine in energy.

It therefore seems evident that the employment of lobeline as an anti-asthmatic is substantiated by experimental facts, though the author has not made any clinical experiments and offers no suggestions as to the proper form of employment of this alkaloid.

REFERENCE.—"Archiv. für Experimentelle Pathologie und Pharmacologie, 26 Band, Heft 3 und 4.

LYCOPODIUM CLAVATUM.

Since the last mention of this substance "Annual," 1889, p. 51, several papers have been published relative to the constituents of the spores. Langer found 49·34 per cent. of oil which contained glycerides of two new acids, having the formulæ of $C_{16}H_{30}O_2$, and $C_{16}H_{30}O_3$. The first spores yielded only the former acid, older spores only the latter.

"From the comparison of the therapeutic action of these two fatty bodies," says the "Therap. Gazette," "the explanation will, perhaps, be found of the remarkable fact that sometimes in **Vesical Catarrh, Gonorrhœa, etc.,** lycopodium seeds possess most positive properties, while in the majority of cases they are without value."

Bukowsky has found that the oil from the fresh lycopodium seeds is a mixture of a glyceride of a new acid, $C_{18}H_{30}O_4$, which he terms lycopodic acid, with other known fats.

The question of the actual constituents of the oil contained in the spores is of less importance than the fact, which we have previously pointed out, viz., that lycopodium in its crude state is absolutely inert, because of its insolubility. By prolonged trituration with sugar of milk the spores become fractured and the mixture becomes an active preparation. It is this so called "white powder of lycopodium" with which its good results in gastric and venereal troubles have been obtained. It is used in doses of 2 to 10 grains.

MANDRAGORA.

This is a poisonous narcotic resembling in its action belladonna, to which it is closely allied. It was used by the ancients to allay pain before surgical operations; in modern times it has been employed as an external application for **Tumours,** scirrhous, strumous, and syphilitic.

A paper on its physiological action was published by Dr. B. W. Richardson ("B. & F. Med. & Chir. Review," 1874). In 1885, Crowzel isolated an alkaloid to which he gave the name of mandragorine ("P. J. Tr.," 1885, p. 1067.) From the "Druggists' Circular" (Aug., 1889) we learn that F. B. Ahrens has obtained an alkaloid from the root, to which he has given the same name, and is probably identical with

that produced by Crowzel. He describes it as a hard, brittle resin, melting at a temperature of 77° to 79° C., and uniting with sulphuric acid to form glittering crystalline scales, which dilate the pupil when outwardly applied. The free base is represented by the formula, $C_{17}H_{23}NO_3$, consequently, although proved to be a distinct substance, it is isomeric with atropine, hyoscyamine and hyoscine.

MENTHOL.

We mentioned the value assigned to menthol by Dr. Lennox Browne in our last issue ("Med. Ann.," p. 585). He regards it as almost specific for **Acute Colds** in the head, and valuable in the treatment of **Catarrhs** of the nose and throat.

Dr. R. Cholewa found excellent results from its employment in **Furunculosis** of the external auditory canal. The swelling rendered the ordinary application difficult. He uses cotton pledgets moistened in 20 per cent. solution of menthol in oil, tightly twisted up and inserted into the external auditory canal. The slight burning produced by this application soon disappears, and pain is rapidly relieved. This application is renewed every twenty-four hours, and is continued until the inflammatory process is cured. If the furuncle has extended so far as abscess-formation, it is opened with a bistoury, and the after-treatment with menthol employed as before. Only a few doses are claimed by the author to be required before entire relief is attained.

He considers that its good results are chiefly due to its action as a bactericide. It will be remembered that Koch found that a solution of menthol 1 to 2000 was capable of destroying the cholera bacilli, as also those of tuberculosis, diphtheria and splenic fever.

Menthol has also been used in the **Vomiting of Pregnancy** with success. In the "Therapeutische Monatshefte," Dr. Weiss states that he gave it to a patient who for three weeks had vomited soon after taking every meal, and that the patient was not again sick. He gave a teaspoonful hourly of a mixture composed of 15 grains of menthol, 6 drachms of rectified spirit, and 1 ounce of syrup.

METHYLAL.

Dr. Tsisvitski publishes as his graduation thesis in the Medico-Chirurgical Academy of St. Petersburg, a detailed account of an elaborate series of observations on the physiological effects on frogs, dogs, and other animals of methylal or methylene-di-methyl-ether. The first application of this substance to therapeutic uses was made by Dr. B. W. Richardson in 1887, since which time it has been employed by various observers in all countries as a **Hypnotic.** Dr. Tsisvitski finds that methylal diminishes the irritability of the brain;

it does not cause sleep in dogs, only in large doses does it diminish the reflexes; it causes a quickening of the heart's beats by acting on the cardiac accelerator centre; it raises the blood pressure at first, but afterwards diminishes it by stimulating and subsequently exercising an inhibitory action on the vaso-motor centre; it increases the rapidity of the respirations by stimulating the respiratory centre; and that, finally, it has no effect on the temperature of the body.

METHYLENE BLUE.

Prof. Ehrlich and Dr. Lippmann have found that methylene blue, when perfectly free from chloride of zinc and all other impurities, is a valuable and safe remedy for relieving pain of various kinds. They have given as much as 15 grains in the day, in gelatine capsules, without producing any toxic symptoms. The usual doses were from 1½ to 4 grains internally, and 1 grain hypodermically. The remedy was employed in twenty-five cases of **Painful Nervous Affections,** and **Rheumatism of the Muscles, Tendons, and Joints,** and in every case it proved more or less efficacious. In two cases of **Migraine,** also, it was very successful. In many ways this substance appears to act similarly to antipyrin, over which it has the advantage of cheapness, and of the hypodermic injection being painless.

MORPHINE.

Some interesting experiments relative to the nausea and vomiting which frequently follow the subcutaneous administration of this drug are recorded by Dr. Alt. He finds that when morphine is injected subcutaneously it is eliminated through the mucous membrane of the stomach, and that this elimination commences two minutes after the injection, continues for about half an hour, and ceases at the end of fifty or sixty minutes. The nauseating effect of subcutaneous injections of morphine are attributable to this gastric elimination of the alkaloid, and the emetic effect coexists with the elimination of the morphine by the stomach, or, at least, never precedes it. Dr. Alt finds that washing out the stomach entirely prevents the production of nausea, a point which may be of value when rebellious vomiting follows the administration of this hypnotic. The quantity of morphine which is eliminated by the gastric mucous membrane is relatively large, and may amount to even half the total amount injected beneath the skin. The author further finds that when washing out the stomach is performed after each injection of morphine, there is produced great attenuation in the toxic effects of this alkaloid, and that then doses, which, under other circumstances, would be inevitably fatal, are found to be administered without danger.

These experiments were first conducted on dogs, but subsequently confirmed by clinical experience.

Phthalate of Morphine.—This drug, a combination of morphine with phthalic or naphthalic acid, is now being employed with considerable success, both for internal administration and for hypodermic injection. It contains nearly 77 per cent. of the alkaloid, and, as there is no difficulty in obtaining even a 20 per cent. solution, it is evident that it is something like three times as soluble as the hydrochlorate of the organic base in question. Amongst its other good properties are the facts that its solutions are less prone to decompose than are the ordinary morphine salts; and that being practically amorphous, and most conveniently prepared in the "scale" form, it is not likely to be dispensed by mistake for a quinine salt.

REFERENCES.—"Berlin Klin. Woch.," No. 40, 1889; "American Practitioner and News," vol. viii., p 52, 1889.

MUTISIA VICIÆFOLIA.

This plant is a native of the Andes, and, according to Dr. Saac, its active principle is attributable to a bitter substance contained in the seeds. The Indians employ it in **Cardiac Affections, Epilepsy,** and many other diseases, while Perreira is said to have obtained good results from it in **Hysteria.** From the investigations of Dr. H. Rusby, it appears that this drug acts favourably in affections of the respiratory passages, but especially in the disturbance of **Cardiac Action,** which is so often consequent upon ascent of high altitudes. In these localities coca is employed as a prophylactic and stimulant, while mutisia is used whenever there is any feebleness of the heart. Thirty-six different species of mutisia have been discovered.

NAREGAMIA ALATA.

This plant is indigenous to Goa, the active principle being found in the bark.

In India naregamia is used in domestic practice as a cholagogue, and also in **Dysentery** as an expectorant with considerable success. At the suggestion of Prof. Drashe, Dr. Schoengut tested the value of the tincture of naregamia in twenty-four different cases,—one of dysentery, one of **Pleurisy,** two of **Pneumonia,** four of **Emphysema,** five of **Bronchitis,** four of **Cardiac Disease,** and seven of **Pulmonary Tuberculosis,**—16 to 50 drops being given daily.

In the case of dysentery, the author states that no effects were noted, and the studies were, therefore, restricted to its use in diseases of the respiratory organs. The cases in which the author found it to

produce the best effects as an expectorant were when there was but slight secretion in the air-tubes, accompanied by severe cough, or where thick, tenacious sputum interfered with expectoration. In one case of bronchial catarrh, with difficulty in breathing and asthmatic attacks, naregamia effected especially good results.

The investigations appear to show that naregamia considerably facilitates secretion, and renders the secretion in air-passages more fluid, even increasing them in amount. It also seemed to facilitate respiration, the respiratory movements becoming deeper and more regular, although experiments made on animals in the laboratory of Prof. von Basch failed to show any direct influence on the respiratory centre.

Naregamia seems to possess no influence on the circulation, even when injected into the veins in dogs, not producing any change in blood-pressure, with the exception of a transient increase of pressure, but appears to be a direct stimulant to the glands of the respiratory tract. It exerts no influence on the digestive organs, with the exception that in certain instances it may produce nausea, or, perhaps vomiting. The disagreeable taste of the tincture may be overcome by the combination of the tincture with laurel-water. No change, either in the quantity or quality of the urine, follows the use of this drug.

NEWBOULDIA LÆVIS.

This is a tree belonging to the natural order Bignoniaceæ. It grows on the West coast of Africa, where a decoction of the bark and roots has been long used, both internally and externally, as a remedy for acute **Malarial Splenitis.** Attention has been called to it by Dr. J. Farrell Easman, who has found it of great value in the treatment of the **Dysentery** common in West Africa. He says, that when in practice at Sierra Leone, he used the drug with success in all acute malarial enlargements of the spleen, and also found out accidentally that the decoction was largely used in the treatment of the puerperal state by the Susus and Timanis (native tribes around Sierra Leone), among whom it was the sovereign remedy in **Post-Partum Hæmorrhage.** Unfortunately, it was often combined with the native spice, so that although good results were obtained in many cases, it occasionally failed in others. This, he believes, was due to the effect of the spice.

The contractile power upon the spleen and uterus displayed by the drug led him, while in the Quittah district in 1881 and 1882, to its trial in the treatment of dysentery due to an atonic condition of the large intestines, and the results were so satisfactory that he was led to

employ it in all cases of dysentery that came under his notice. In all conditions indicative of atony of the involuntary muscular fibre newbouldia is useful. In all passive hæmorrhages it appears to be useful when given in full doses. It seems to act in moderate doses upon the involuntary muscular fibres generally as a tonic and alterative, and in large doses as a direct stimulant. He has found that when given to females it stimulates the uterus, and may cause premature menstruation or even abortion.

The preparations used have been : (*a*,) *Decoction* of the fresh bark of the trunk and roots ; (*b*,) *Fluid extract*, prepared by maceration and percolation, of the strength of 1 of bark to 5 of rectified spirit,—dose of the *decoction*, 1 to 2 ounces ; and of the *fluid extract*, 15 to 60 minims. In the first stage of dysentery the treatment is preceded by a full dose of castor oil in ordinary cases, or a saline purgative when there is more blood than mucus in the stools. As soon after as the bowels have acted twice or thrice, he gives full doses of the drug, and repeats these until the bowels are constipated ; the administration is then continued at less frequent intervals until there have been no stools for at least twenty-four hours. Then, according to the circumstances, the drug is either continued in smaller doses for a few days, or discontinued altogether. A final aperient may be necessary to complete the cure.

NUX MOSCHATA (**Myristica**).

That the nutmeg is capable of exercising very powerful physiological effects is well known, but it has been comparatively little used in medicine. Schmideus, in 1683, recorded the case of a nobleman, thirty-six years of age, who, after taking four nutmegs, remained in a state of coma vigil for three days, and on emerging from this state his memory was gone. Cullen relates a less severe case in which the symptoms were similar, but delirium followed. In other cases its action has closely resembled that of cannabis indica.

Dr. Shoemaker, ("Medical Bulletin,") has called attention to its value in insomnia, which he says may be effectually relieved by it when opium has failed and chloral is contraindicated. It can be administered in **Delirium Tremens** with safety and benefit, when any other sedative would be perilous. For **Itching** and **Irritable Hæmorrhoids** an ointment composed of 2 drachms of powdered nutmegs, 1 drachm of tannic acid, and 1 ounce of lard, constitutes an excellent application.

In some former experiments with the nutmeg, made by Dr. H. C. Wood, its undoubted narcotic powers were not attended by any strong depression of the heart's action, although there was slowing of the

respiratory movements, and when large doses were given there was loss of reflex activity.

Dr. Shoemaker recommends its use in summer diarrhœa—½ a drachm being given in milk.

Dr. Richard Hughes considers it of great value in the flatulent distension of hysterical women, when "everything turns to wind."

Dose.—2 to 10 grains for children, and 10 to 60 grains for adults.

OREXIN.

According to Professor Penzoldt, of Erlangen, this substance, the correct chemical name of which is chloride of phenyl-dihydro-chinazolin, is to be considered as a pure stomachic, and has great powers of increasing the appetite.

The experience of subsequent observers has given so little support to the claims made for it, and as it also appears capable of producing very unpleasant symptoms, we feel hardly justified in giving space to its consideration at present.

REFERENCES.—Penzoldt, "Therap. Monatshefte," Feb., 1890; Paul and Busch, "Phar. Journ. and Transac.," March 1, 1890; Jaksch, "Prager. Med. Woch.," March 26, 1890; Imredy, "Pharm. Post," April, 1890; Martins, "Deut. Med. Woch.," May 15, 1890.

PANBOTANO.

A maceration of the bark of this tree, which is indigenous to Mexico, must be added to the many proposed substitutes for quinine in **Malarial Fever.**

Dr. Valude has published notes of fifteen cases in which this remedy had been administered, of whom eight were affected with intermittent fever. He claims that in eighty-eight cases 1 dose, or in some cases 2 doses, were sufficient to prevent the febrile access. The remedy is stated to be tolerably well borne, although in some cases a certain amount of vomiting was produced. These unfavourable effects, however, were avoided when the medicine was given on an empty stomach.

The preparation employed was made by macerating 70 parts by weight of the crushed bark in 1000 parts of water, which was boiled down to one-half the volume. Of this, 1 pint might be taken in twenty-four hours by the patient.

PEREIRINE.

An extract of the pao pereira bark has been found valuable by Dr. F. Tiberica, as an adjunct to quinine in cases of **Malaria,** when the latter drug fails in its effects and produces depressing results on the heart and nervous system. He says that it doubles the therapeutic

activity of quinine, while at the same time preventing the untoward effects frequently produced when the drug is pushed ; and that it has no depressant action on the heart.

PHENACETIN.

Dr. R. Heinmann, ("Jour. de Méd. de Paris,") records excellent results from this drug, in **Whooping Cough.** He prescribes it as follows: —6 grains, given in four doses, to a child three years of age ; 5 grains, in three doses, to a child two years of age ; 3 grains, in four doses, of about ¾ of a grain to a nursing infant seven months of age.

The author states that he never observed any unpleasant after-effects, but whenever the treatment was suspended the paroxysms of coughing returned with their original intensity and frequency.

PHENYL URETHAN.

This is a white powder produced by the action of chloride of ethyl on aniline. It is insoluble in water, but freely soluble in alcohol.

Prof. Gracomeni, writing in the "Journ. de Médicine de Paris," Dec. 15th, 1889, states that he found it possess marked **Antipyretic** and **Analgesic** properties, while at the same time exercising a beneficial influence on the general system. A dose of 7½ grains is said to be equal to 15 grains of antipyrin, and is capable of producing a fall of temperature of from two to five degrees, which may be maintained for from four to eight hours. The fall of temperature occurs within twenty to forty minutes after the administration of the drug, and is accompanied by no disagreeable after-effects. In acute **Articular Rheumatism** it reduces pain and swelling. As an analgesic its results do not seem to have been so apparent. Its action was uncertain. He recommends a solution in sherry wine, which is said to prevent collapse, cyanosis, and other unpleasant symptoms.

PHOSPHORUS.

Mr. Balmanno Squire records ("Brit. Med. Jour.," Nov, 30th, 1889), a case in which phosphorus dissolved in oil was given for **Eczema,** and, in addition to having beneficial effect in that disease, it had also a most marked remedial action on diabetes from which the patient was also suffering. It was given in perles containing $\frac{1}{100}$ of a grain, to the extent of $\frac{1}{10}$ of a grain a day for three days, and then $\frac{1}{5}$ of a grain daily for seven days. He thinks this result due to the well known action of phosphorus on the liver.

PICRIC ACID.

M. Cavelli, ("Gazette Médicale de Paris," November 16th, 1889,) claims that picric acid is a remedy of great efficacy in the treatment of various **Skin Affections** characterized by cutaneous inflammation. Thus,

he claims that in the course of an epidemic of **Erysipelas,** he has obtained the best results by the external use of picric acid ; so also in the case of **Lymphangitis,** occurring in a gouty subject, as a complication of caries and necrosis of the phalanges of the toes, the local application of picric acid very rapidly reduced inflammation and pain. Similar effects were also obtained through the use of this remedy in a large number of cases of **Eczema** and **Erythema.** As regards the mode of action of picric acid, the author suggests that in penetrating the cells of the corneal layer, picric acid forms a protective layer in the skin, and that in virtue of its astringent action, it affords a protection to the malpighian layer, so leading to a reduction of the inflammation. While, finally, he thinks that perhaps through entering into the lymphatic vessels picric acid may exert an antiparasitic action. He employs a solution in water,—of 1½ parts of picric acid to 250 parts of distilled water,– applied externally five or ten times daily.

PILOCARPINE.

Witkowski considers pilocarpine to be almost a specific in **Jaundice,** so much so, indeed, that if after treatment, lasting from ten to sixteen days, the jaundice does not disappear, he would attribute it to malignant disease. In one patient, who had suffered for four years, ⅛ of a grain of pilocarpine subcutaneously injected once or twice daily for three weeks caused the disappearance of the jaundice for the three years whilst under observation. Thirty analogous cases treated in a similar manner were followed with equally satisfactory results. The only cases in which it did not succeed were when the jaundice was accompanied by a tumour of the liver. He therefore recommends its use in all cases where the condition of the heart will permit it.

Dr. McGowan reports the successful treatment of a case of **Belladonna Poisoning** with pilocarpine. The patient when first seen by him appeared to be at the point of death, having four hours previously swallowed a large tablespoonful of linimentum belladonnæ, B.P., in mistake for a dose of a mixture. Apomorphine having failed to produce vomiting, and nothing having the odour of belladonna being removed by the stomach-pump, ⅛ of a grain of pilocarpine was injected hypodermically, and a similar quantity five hours afterwards when partially recovered, strong coffee and other stimulants being also administered. No perspiration followed the use of the pilocarpine.

REFERENCES.—"Therap. Gaz.," p. 46, Jan., 1890. "Brit. Med. Journ.," p. 420, Feb. 22, 1890.

PINEAPPLE JUICE.

Dr. Flaschar recommends pineapple juice as one of the best remedies for dissolving tough mucous secretion when obstructing the air-passages. He claims that he has had remarkable success with this remedy in cases of **Chronic Bronchitis**, with insufficient expectoration and marked dyspnœa, while no accident or unpleasant result has ever followed its administration.

He prescribes it in doses of 8 or 10 teaspoonfuls at first, while later the quantity may be somewhat diminished.

REFERENCE.—"Journal de Médicine de Paris," July 7, 1889.

PULSATILLA.

M. Bovet has used the alcoholic extract with success in cases of **Dysmenorrhœa** and **Ovaralgia**. He finds this preparation more efficacious than the active principle anemonin. This alcoholic extract is made from plants gathered fresh in June, and composed of equal parts by weight of the plant and 90 per cent. of alcohol.

He uses it as follows: If the case is one of dysmenorrhœa, he gives the patient, four days before the beginning of the expected period, 4 tablespoonfuls of a wine which contains about 10 drops of the alcoholic extract of pulsatilla to the tablespoonful. As soon as menstruation begins, the use of the drug is to be discontinued for three or four days, and then resumed for three or four days in the doses employed at the beginning. Recovery from dysmenorrhœa is frequently observed after following this practice for two months. If chlorosis exists along with dysmenorrhœa, Bovet gives chloride of manganese also, in doses of $\frac{1}{2}$ of a grain to the tablespoonful of the wine of pulsatilla. In cases of ovaralgia, as the result of chronic infarct of the uterus or inflammation of the neighbouring structures, the pulsatilla wine is given continuously, in moderate doses, until the pain completely disappears. The author states that complications are never observed in the course of the treatment.

Speaking from considerable experience of this remedy, we think that its use as a general specific for cases of dysmenorrhœa will prove disappointing. There are cases in which its action is undoubted, and even remarkable. When the pain is accompanied by a scanty discharge, and this is of a dark venous character, and especially when the condition has been produced by a chill, pulsatilla will give excellent results. Theoretically, we regard venous congestion, either of the uterus or ovary, the indication for pulsatilla; but when this condition is of a passive character, and the menstrual discharge is not only venous but too abundant, hamamelis is a more effectual remedy.

When the menstrual discharge in cases of dysmenorrhœa is not only

venous but comes away in dark, blackish clots, and the discharge itself is of an almost pitchy consistence, saffron (crocus sativus) will prove a better remedy than either. It is because pulsatilla is really valuable within its own sphere of action that we venture to point out the clinical indications for its employment.

RHUS AROMATICA.

In continuation of the favourable reports of this remedy in **Incontinence of Urine**, given in our last issue, we notice the paper of Dr. W. M. Powell ("Annals of Gynæcology and Pædiatry," May, 1890), in which he reports sixteen cases of enuresis cured in children from two and a half to eighteen years of age, which had been under treatment at different times at the dispensaries but without relief. All of the cases reported were free from phimosis or preputial adhesions, and in all cure was accomplished in about one month's treatment with the fluid extract of rhus aromatica.

The remedy was given usually with compound tincture of cinchona or elixir of calisaya bark, Dr. Powell recommending the following formula for young children :—

℞ Ex. Rhus Aromat. f℥iij | Aq. Cinnam. q.s. ad f℥iij
Elix. Aromat. f℥iss |

M. Sig.—Half-teaspoonful, to be increased to one teaspoonful, four times a day after eating.

RHUS TOXICODENDRON.

Dr. Aulde, in the October number of the "Therapeutic Gazette," calls attention to the remarkable results given by this remedy in certain cases of **Chronic Rheumatism** which he records. Some correspondence which resulted from this article appeared to confirm the value of the drug in chronic rheumatism, but not Dr. Aulde's view that he was bringing forward a totally new remedy. As a matter of fact an article on this drug will be found in "Phillips' Materia Medica and Therapeutics," 1879.

Dr. H. C. Wood, editor of the "Therap. Gaz.," says : "Nearly ten years since I was much impressed with the accounts published in various homœopathic journals of Philadelphia of rhus toxicodendron for rheumatism, and being at the time visiting physician to the Philadelphia Hospital, with a large number of cases of subacute, chronic, and acute rheumatism under my care, I availed myself of the opportunity to test the virtue of the drug. I obtained the homœopathic tincture from a large homœopathic pharmacy. I tried it in all forms and doses, homœopathic, small, and large, and found it exceedingly uncertain in its action, and giving no definite good result. I was not able

to see that the patients progressed, on the average, any more rapidly when taking it than when left to nature and nursing."

To a casual observer it would seem incredible that there should be so much conflict of evidence respecting facts so easy of observation as whether a certain drug does or does not exercise a beneficial effect. It is in the presence of such diametrically opposing statements that it is difficult to take a hopeful view of the future of therapeutics. But if we look more closely into the matter it is not difficult to find the source of error, and therefore of divergence. To say that rhus toxicodendron cures chronic rheumatism is scientifically false. It is equally false to say that any individual remedy cures any single disease. The relation of rhus to chronic rheumatism may serve us as an instance. We apply the name chronic rheumatism to a vast variety of morbid conditions, because we believe they are due to the same cause, and know that they have certain prominent symptoms in common ; but if we study these cases in closer detail we shall find that immediate cause of the pain and the site of the inflammatory (and very often the asthenic) process is in distinct tissues in different cases—it may be the muscle, the sheath of the muscle, the synovial membrane, the cartilage, the tendons, or ligaments. It is not difficult to understand that a medicine may exercise a specific action on one tissue and have no action at all upon others. Thus, when animals are slowly poisoned by bryonia, another "new" remedy for rheumatism, it is found that the tissues chiefly selected for the site of inflammation are the serous and synovial membranes, the pleura, peritoneum, and the lining membrane of the joints, and that the muscular tissue is also reddened and injected. With rhus we find that it is the skin and the fibrous tissues which are chiefly affected in cases of poisoning. Its specific action appears to be upon the tendons, fasciæ, sheaths of the muscles and nerves. This elective affinity of drugs for certain tissues is undoubted, and will explain many of the divergent results which are recorded respecting the action of a medicine in apparently the same disease.

Thus it is quite possible that a case of sciatica may be cured by rhus after the failure of other remedies, and that it should be therefore extolled as a remedy for sciatica. As a matter of fact, it is perfectly useless in pure sciatica, but it is frequently the best remedy when the complaint is rheumatism of the sheath of the sciatic nerve.

In the same manner it is of great value in true rheumatic conditions of the tendons, ligaments, and sheaths of muscles, a condition in which the circulation through the tissues must be defective, because the pains are usually worse while the patient is at rest ; and although pain is

caused by the first movement, it is relieved after slight exercise, a condition precisely the opposite to that which obtains in inflammatory conditions of the synovial membranes when freedom from pain is obtained by absolute rest, and all motion is painful.

If we give this remedy in every case which comes under our notice to which the name "chronic rheumatism" may be applied, we shall meet with many failures; if we take it as a remedy which will favourably influence the morbid conditions of fibrous tissue frequently met with in rheumatic disorders, we shall quickly recognize it as a valuable addition to our Materia Medica, but even in these conditions we must expect failure sometimes, because "chronic rheumatism" of these tissues is frequently gout—that is to say, the symptoms are due to a deposit of urate of soda, which will maintain a mechanical irritation in spite of the medicine. In these cases the use of systematic exercise will do more to relieve and cure than any medicine which may be given.

Dr. Chas. Raymond Carpenter, who contributes some cases of cure by rhus to the "Therap. Gaz.," recommends the use of the homœopathic tincture, which is made from the green drug (fresh leaves 1 part, alcohol 60 O.P. 2 parts). Of this he uses 1 to 5 drops. In two cases he found it necessary to reduce the dose.

RUBUS CHAMÆMORUS (Yellow Raspberry).

Decoctions and extracts prepared from the fresh plant have some reputation in Russia as diuretic remedies. Prof. Popow has extracted an acid in the form of a colourless powder from the extract of the flowers; this is very soluble in alcohol but only sparingly so in water. It forms, with bases, crystalline salts, which are very soluble in water. It is regarded as the active principle of the plant. The diuretic effect of this salt is produced without any stimulation of the heart's action, V. Bouchoneff has used an infusion made from 16 parts of the leaves to 180 parts of boiling water; of this he gave 5 or 6 teaspoonfuls each day. He employed it as a diuretic in patients suffering from various forms of **Nephritis, Cirrhosis of the Liver, Cardiac Affections, Chloro-anæmia,** with œdema, etc. He states that only in one case did it fail to produce a diuretic effect.

TEA.

A new base, to which the name theophylline is given, has been reported by Russell, ("Zeitschrift für Physiolog. Chemie.") The greater part of the caffeine had been eliminated by crystallization. After various manipulations to remove other bodies, an ammoniacal solution of silver precipitated a double salt of theophylline and xanthine. The

xanthine was removed by several hours' evaporation, which process, being continued, gave rise to brown needles of theophylline containing one molecule of water of crystallization and having the formula $C_7H_8N_4O_2$.

It will be remembered that theine has the formula $C_8H_{10}N_4O_2$, which was proved by Jobst to be identical with caffeine. No physiological experiments appear to have been made with theophylline.

Dr. J. K. Baudoy relates ("Weekly Med. Review," 1889,) two cases of neuralgia treated successfully with the hypodermic injection of theine. The first patient was a lady suffering from sciatica, in whom all the usual measures, including galvanism, had been tried without avail. He injected ¼ grain of theine, rapidly increasing the dose on successive days to ½ grain, with the effect of giving immediate and permanent relief. A relapse occurred in the other leg, which was cured by the injection of ½ grain. In another case the patient suffered from occipital and supra-orbital neuralgia, which was cured by the injection of theine into the arm. He says that no unpleasant effects were noticed from its employment.

ULEXINE.

We mentioned the discovery of an alkaloid from ulex europæus, the common furze, by A. W. Gerrard, ("Medical Annual," 1888).

Its formula is $C_{11}H_{14}N_2O$, and it closely approaches in chemical characters cystisine, which is obtained from cystisus laburnum.

Gerrard and Symons, however ("Pharmaceutical Journal and Transactions," June 14, 1890,) do not admit that these two alkaloids are identical, and, in fact, claim that while ulexine and cystisine have much in common, there is quite as close a resemblance between eserine and sparteine, both of which are alkaloids obtained from plants belonging to the same natural order, and in percentage composition they are not far removed from pyrodine, nicotine, and pilocarpine.

The properties of ulexine have been recently subjected to elaborate study by Professor Kobert, in the Pharmacological Laboratory of the University of Dorpat, and his results published in an original communication in the "Deutsche Medicinische Wochenschrift," for May, 8, 1890.

His experiments show that these two alkaloids are practically identical, and their properties are described as follows :—In small doses given subcutaneously to animals an evident increase of blood-pressure is produced. If extremely small doses are given, the rapid excretion of these alkaloids through the kidneys may prevent any effect on the blood pressure, since excretion may be quite as rapidly, or even more rapidly, accomplished than absorption. Both

these alkaloids, therefore, on these grounds, possess diuretic properties, even in cases of depressed blood-pressure. This action is, however, a transient one, and passes off in a few hours, and cannot be compared in intensity to the corresponding action of digitalis, principally for the reason that two of the active constituents of digitalis are only with difficulty absorbed, and are with still greater difficulty excreted, and, as a consequence, a prolonged action is produced. Cystisine and ulexine, on the other hand, are both rapidly absorbed, and are likewise excreted with great rapidity; while digitalis acts simultaneously in increasing the action of the heart and producing contraction of all the blood-vessels, the diuretic action of the two alkaloids under consideration rests only on the irritation of the vaso-motor centre and the consequent increase of blood-pressure, but are without any action on the heart itself. In this connection Professor Kobert is in opposition to Dr. Bradford, who has claimed that the increase of blood pressure may be produced even in paralysis of the vaso-motor centre. Professor Kobert, however, states that in isolated organs no vascular action whatever can be produced through these alkaloids.

Professor Kobert believes that this remedy will be of considerable value in therapeutics from the property which it possesses, in comparatively small doses—($\frac{1}{20}$ to $\frac{1}{12}$ grain of the nitrate)—injected subcutaneously, of, within half-an-hour, producing rapid increase of blood-pressure, especially if the pressure has been considerably below the normal.

VERATRUM VIRIDE.

Liegeois, ("Lond. Med. Recorder," August 10, 1889,) speaks highly of the properties of veratrum viride in **Palpitation of the Heart** due to various causes, especially in cases of functional origin. It also gives good results in palpitations associated with cardiac hypertrophy resulting from valvular or peripheral lesions. He claims that veratrum is indicated in the following conditions: (1,) In functional palpitation and arhythmia, accompanied by heightened arterial pressure; (2,) In palpitation and arhythmia due to organic valvular lesions during the period of hypersystole; (3,) In palpitation and arhythmia during the first stage of the so-called arterial or vascular heart-disease. The alkaloid (veratrine) of white veratrum only slows the heart and lowers arterial tension when given in doses not exceeding 4 to 5 milligrammes ($\frac{1}{16}$ to $\frac{1}{12}$ grain), and this dose must be repeated every four or six hours in order to maintain the effect. Untortunately, these doses are apt tc prove extremely irritating and even emetocathartic. The veratrum viride, on the other hand, does not give rise to these distressing symptoms, and, like strophanthus, may be given for weeks together, if a

sufficient interval be allowed to elapse between each dose, and provided that the dose be not excessive, no cumulative effect is produced and tolerance is not established.

Dr. W. Hutchins records, (" Therap. Gazette," Dec. 16, 1889,) a case of **Exophthalmic Goitre** in a woman aged thirty-five, anæmic and very debilitated; the eyes so prominent as to almost prevent closing of the lids, goitre large and mind affected. This condition had lasted twelve years. He gave tincture veratrum viride, 3 drops, twice daily. This was barely tolerated at first, but at last she was able to take 12 drops twice daily. This dose was continued twice daily for twelve months, then dropped to one dose daily for a few following months.

The improvement of the patient was gradual but progressive, and at the expiration of twelve months from beginning of treatment the goitre had disappeared, the eyeballs had receded to their normal position, the mind had returned, and her weight was ascertained to be one hundred and sixty pounds.

Part II.—Special Diagnoses.

The Hand

As a Diagnostic Factor in Diseases of the Nervous System.

By E. LONG FOX, M.A., M.D. Oxon, F.R.C.P. Lond.

Cons. Phys. Bristol Royal Infirmary, late Lect. Medicine, Bristol Sch. of Med.

The condition of the hand as a factor for diagnosis is usually important in combination with other physical signs. Exceptis excipiendis, the movements, the dynamic power, the sensory accuracy, the nutrition, the tremor, the abnormal posture of the hand or fingers, can only be regarded as symptoms that make it probable that other parts of the body are also affected. The stage of the disease, too, is constantly an important item in diagnosis. The hand may be at one time the seat of paralysis and of atrophy ; at another time tremor, paralysis, and contracture may follow in regular order. In certain cases the diagnosis is not made from the atrophy and paralysis of the hand, but from the sequence with which paralysis follows atrophy, or atrophy paralysis.

But bearing these points in mind, and remembering that any division of the subject must confessedly be logically a crossed division, there may be a certain convenience in considering the most prominent condition of the hand at any one time, and in grouping together those lesions, central or peripheral, in which some peculiarity in the hand is the most frequent and the most striking phenomenon.

The subject naturally divides itself into a review of paralyses, atrophies, and the many forms of hyperkinesis. Any of these may depend on lesion of the centres, or of the nerves themselves. Tremor of the hand may in one case point to lesion of the brain or of the spinal cord, less commonly to injury or disease of nerves of the forearm or of the hand itself. Atrophy will scarcely point to a cerebral centre, except as a starting point for secondary decadence : more often is it the result of some lesion of cells of the anterior horns of the spinal cord, or of neuritis, except in those cases in which it is essentially myopathic. Paralysis on the other hand is most commonly a sign of involvement of the cortical motor area of the brain, but it may depend

Fig. 1.

Fig. 2.

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Fig. 4.

on lesions of any of the organs of conduction from the brain, the pyramidal tracts to their decussation, of the same tracts in the spinal cord after decussation, of the brachial plexus or of the nerves themselves, and in some cases on atrophy of the muscles; whilst contracture owes its origin either primarily to lesion of the motor cortical area of the brain with secondary degeneration of the pyramidal tracts, or to lesion of the upper cord with similar secondary degeneration, or less commonly to chronic neuritis; or it may be the manifestation of the influence of uninjured muscles overcoming their paralyzed antagonists.

Taking then paralysis as being either central or conducting, according as the lesion destroys the centre of motion in the brain, or occurs in the line of conduction from the centre to the circumference, the latter may be briefly considered first. Starting from the nerves themselves the two morbid conditions are disease and injury. The minute pathology, that of acute degeneration, being practically the same in both.

Neuritis may be acute and inflammatory, leading to atrophy of nerve fibres at a later date, or chronic but atrophic from the first. It is caused by contiguity to other inflamed parts; or it may be toxic, as from lead, mercury, silver, arsenic, alcohol, the inhalation of bisulphide of carbon, etc., and perhaps under this head may be placed Dr. Waldo's case from ptomaines in tinned meat; or it may be microbal, as in diphtheria, leprosy, syphilis, and probably the beri-beri of Japan; or from gout and rheumatism. In multiple neuritis the main symptoms are early pain, paralysis, atrophy soon following the paralysis, the reaction of degeneration, diminished cutaneous reflexes, loss of knee-jerks, and trophic disturbances of skin. Complete anæsthesia is rare. The posture of the hand varies according to the stage of the disease. The flexors of the fingers are not affected, but their action is impaired by the inability of the extensors of the wrist to co-operate with them and maintain the extension of the carpus, necessary for forcible flexion. The paralyzed muscles are supplied by the musculo-spiral nerve, but the supinator longus and the extensor ossis metacarpi pollicis, that are also supplied by this nerve, generally escape.

The lesion rarely co-exists with lesion of the anterior horns, or of the brain, but it has been known to co-exist with degeneration in the cervical bulb affecting the columns of Goll and the direct cerebellar tracts of Flechsig (Brain, 1882). A form has been described ("Lancet," vol. i., p. 542, 1889) from loss of nutrition of the nerve from obliterating arteritis.

In the toxic forms, wrist-drop is generally a prominent spmptom in the paralysis from lead. Tremor is rare. In chronic cases there is atrophy of the thenar and hypothenar muscles. (See *Fig.* 14.) The posture of *main en grippe* is sometimes seen. The motor fibres suffer more than the sensory ; but although the anterior roots of the nerves are sometimes involved, it is rare to find lesions in the cells of the anterior horns. The reaction of degeneration is only found in severe cases of atrophy of muscle. The paralysis is usually bilateral. The blue line on the gums is of great diagnostic value, but this may exist for many years without any other symptom of lead-poisoning.

In *Fig.* 10, after Gowers, there is seen the prominence at the back of the hand from paralysis of the extensors, from the toxic influence of silver. Arsenic affects mainly the extensors ; or the chief symptoms induced by it may be ataxy, simulating what is seen in tabes dorsalis, with diminished sensibility ; or the condition may be that of multiple neuritis.

In mercurial poisoning, tremor is the prominent symptom, ceasing during sleep, more considerable than the tremor of general paralysis, and accompanied or followed by some loss of power. Alcoholic neuritis doubtless exists alone, though it may be complicated with chronic myelitis. The palsy is motor with little sensory disturbance, and mainly affects the musculo-spiral nerve in the upper limbs. There is partial wrist-drop (paralysis of the extensors of the wrist) with partial contraction of the fingers, especially of the third and fourth.

Messrs. Edmunds and Lawford have called attention to a rare affection of the eye in alcoholic neuritis, which may be of diagnostic value, a widespread haze of the retina, without hæmorrhage or localized exudation. Section of the retina revealed slight œdema of the nerve-fibre layers in the immediate vicinity of the optic discs, and well-marked œdema spaces in the outer granular layer, in which spaces were round and oval masses of clear homogeneous effusion.

In the form that depends on the presence of a morbid organism the neuritis is sometimes met with alone, at other times with granular and fatty changes in the motor cells of the spinal cord, which may precede or follow the lesion of the nerves themselves. The posture of the hand is influenced by the paralysis, mainly of the extensors of the wrist and fingers, with slight flexion of the hand or the wrist, and of the fingers on the hand.

In leprosy the neuritis takes a somewhat different course. The nerve-fibres are secondarily affected from compression of increased interstitial growth, in which the bacillus of leprosy is found. As a

consequence of this, the destruction of all the nerve-fibres is usually not complete. There is some paralysis, and wasting of muscles. Anæsthesia is a prominent symptom, especially in the hands.

In the beri-beri of Japan the anæsthesia is not so marked. The nerve fibres and the interstitial tissue are involved at one and the same time. The lower limbs suffer most, but the nerves of the hand may participate in the morbid condition. Wasting of the muscles is almost coincident with the paralysis.

In syphilis, gummata may form in or on the nerve-trunks; or these structures may be the seat of interstitial neuritis. The frequency of syphilitic affections within the cranium or the spinal column render the diagnosis of these cases somewhat difficult. The points of diagnosis are manifold, but Buzzard's dictum is of practical use: "If we meet with a case of paralysis of a limb, in which there exists marked atrophy, and the muscles which are wasted exhibit complete abolition of Faradic contractility, while the reaction to the intermitted constant current is exaggerated, we may safely assume that there is a lesion of the nerve-trunk supplying the atrophied muscles, and that we have not to do with paralysis of central origin" (Buzzard, "Syphilitic Nervous Affections"). The posture of the hand in syphilitic peripheral neuritis is determined more by the atrophy than by the paralysis.

Injuries, wounds, compression of the nerves, give rise to marked changes in the posture of the hand. Some of these are illustrated by the following figures. Dr. Gowers has most kindly allowed the use of some of the figures from Vol. I. of his standard work on "Diseases of the Nervous System."

Thus *Fig.* 1 shows the posture of the hand in contraction of the palmar fascia, resembling that in paralysis of the long extensors of the fingers (Gowers).

Fig. 2. Paralysis of the fibres of the flexor sublimis which act on the two middle fingers. Twelve years' duration. The second phalanges of these fingers are bent backwards and subluxated from the contracture of the unopposed interossei, whilst the last phalanges are kept in position by the unaffected flexor profundus (Gowers).

Fig. 4. Recent incomplete paralysis of the interossei from a punctured wound of the ulnar nerve at the wrist. Attempt to extend the fingers. The loss of extension of the two last phalanges is chiefly marked in the last two fingers from the influence of the lumbricales (Gowers).

Fig. 5. Paralysis of interossei (ulnar nerve), slight in degree. Attitude of fingers at rest (Gowers).

Fig. 6. Paralysis of all the intrinsic muscles of the hand, and of the

Fig. 5.

Fig. 6.

Fig. 7.

Fig. 8.

long flexor of the thumb, in consequence of an injury to the brachial plexus in dislocation of the shoulder. The fingers present the claw-like attitude ; the thumb is in extension (Gowers).

Fig. 7. Paralysis of the ulnar nerve from a wound at the wrist. Extreme claw-like hand from the unopposed contraction of the common extensor and the long flexor of the fingers and thumb (Gowers).

Fig. 8. Position of the hand in long-standing paralysis and wasting of the thenar muscles, under the influence of great contraction of the long extensor. The metacarpal bone of the thumb has been displaced so as to be somewhat above the other metacarpal bones (Gowers).

Fig. 9. Paralysis of the musculo-spiral nerve. Maximum extension of the wrist and fingers. The extension of the fingers progressively diminishes from the first to the fourth (Gowers).

Fig. 11. Paralysis of the abductor brevis and opponens pollicis. From the want of these muscles the thumb can only be brought into contact with the tip of the index by strong flexion of the last two phalanges of the fingers ; otherwise the tip of the thumb only reaches the middle of the second phalanx (Gowers).

Fig. 12. Musculo-spiral paralysis (Ranney).

Fig. 13. Median paralysis (Ranney).

Passing to the spinal cord, the posture of the hand is abnormal in acute ascending (Landry's) paralysis. The attitude varies in this condition. In most cases the hand is flaccid, as in the early stages of cerebral hemiplegia ; at other times the claw-hand has been seen, the nerves being paralyzed unequally. The pathology is still obscure. In Westphal's cases, the most careful investigation failed to discover any lesion of the nerves or centres. The suspicion of an infective disease has been supported by a remarkable case published by Baumgarten, in which in the blood and in the fresh juices of the tissues of one who died of acute ascending paralysis, rich parasitic formations were found, which Baumgarten had demonstrated a short time before in the blood of animals which had died of pestilent disease of spleen. Erb thinks there is a close relation between sub-acute anterior poliomyelitis and acute ascending paralysis. There is no electrical change in the muscles. Some paræsthesiæ.

Brachial Monoplegia is of three kinds : (1,) Cerebral, from lesion of the internal capsule a little behind its knee, with apoplectic symptoms. Sudden paralysis, exaggeration of tendon reflexes, no cutaneous or deep modification of sensation to the same extent as in the following forms. Some contracture several months after the disease had commenced ; (2,) The Hysterical form. There is no voluntary movement,

Fig. 9.

Fig. 10.

Fig. 11.

Fig. 12.

no contraction. The muscles retain their normal volume. Very slight exaggeration of tendon reflexes. No facial paralysis. Marked anæsthesia. In this, as in the early stages of the cerebral form, the hand is flaccid ; (3,) The Spinal form, brachial monoplegia from lesion of the anterior horns of the cervical bulb. Access sudden, with feverishness. Early reaction of degeneration, even in the first fortnight. Muscular atrophy somewhat early. Rapid abolition of the tendon reflex in the affected limb. Sensory disturbances more common than in the cerebral form, anæsthesia less intense than in the hysterical form. Various paræsthesiæ. Dr. Poore says monoplegia may be complicated with rheumatism. The posture of the hand in this spinal form depends on the extent and rapidity of the muscular atrophy.

The hand in **Cerebral Hemiplegia** varies in attitude partly in proportion to the time that has passed from the original lesion, partly on the precise seat of the lesion. Ordinary hemiplegia induces at first a mere flaccidity of hand, with a very slight contraction of the flexors over the extensors. As atrophy of the muscles becomes a prominent factor, this over-action of the flexors over the extensors is more marked. But atrophy is rare in cerebral paralysis. Lesions of the cerebral hemispheres do not of themselves cause wasting of muscles. When atrophy is present, it is partly from disease of the muscles, partly from the secondary degeneration of the pyramidal tracts spreading to the anterior horns, partly from mal-nutrition of local nerves. But the most important abnormality of posture is the contraction of the hand on the wrist, and still more frequently of the fingers on the hand, the result possibly of secondary degeneration of the pyramidal tract. *Fig.* 23 shows post-hemiplegic contraction of the fingers, with paralysis of the antagonist extensors, not an extreme case. It is possible that this symptom may owe its origin to lesion about the Rolandic region. Lesion of the posterior third of the internal capsule does not lead to it, whilst injury to some part of the anterior two-thirds of this capsule does. The early appearance of ankle-clonus is a guide to the probable contraction of the leg, and thus to the seat of injury in the brain, but the corresponding wrist phenomenon is not so common.

It is convenient to group in several divisions the many lesions of which atrophy is the prominent symptom. The most scientific classification of them has been made by Prof. Dreschfeld.

The first group includes infantile paralysis, and acute poliomyelitis of adults ; progressive muscular atrophy ; subacute and chronic poliomyelitis, in some cases of which, however, the atrophy may be due to peripheral neuritis ; amyotrophic lateral sclerosis ; acute and chronic bulbar paralysis ; Wernicke's polien-cephalitis superior, which seems to

correspond to ophthalmoplegia of Hutchinson; a lesion of motor ganglion cells, spreading from the periependymary myelitis of Hallopeau, from syringo-myelia and the diffuse glioma; and rare cases of hæmorrhage into the spinal cord; secondary atrophies from secondary implication of ganglion cells in locomotor ataxy, tumour of cord, and syphilis of cord.

In the second group the spinal cord is normal. There is separation of muscles from their trophic centres by peripheral neuritis. This group includes multiple peripheral neuritis; lead palsy with atrophy, though de Watteville believes that in lead atrophy the ganglion cells are implicated, though they show no change microscopically; alcoholic neuritis, and the other forms already touched upon under the head of paralysis, including the secondary atrophies due to wounds of or pressure upon nerves.

The third group, intermediate between groups one and two, includes atrophies following affections of the spinal membranes, especially pachymeningitis.

The fourth group is primary myotic, including the juvenile form of Erb; Charcot and Déjérine's form with atrophy of the facial muscles; and pseudo-hypertrophic paralysis: all characterized by absence of the degenerative reaction.

The fifth group has reflex atrophies. The trophic ganglion cells in the spinal cord are irritated reflexly. This group includes Charcot's cases of atrophy caused by affections of the joints.

The connecting link of all these groups, except the fourth, is lesion of the ganglion cells of the anterior horns, or some injury or disease of the conducting nerve from these cells to the muscles.

Acute Anterior Poliomyelitis of infants and of adults, an atrophy of ganglion cells of anterior horns from a diffuse local myelitis. Sometimes there is atrophy of antero-lateral columns and of nerve-roots. The peripheral nerve in the paralyzed limb is often atrophied, and sometimes covered with fat; the prodromata being febricula, restlessness, and sometimes convulsions. The atrophy is secondary to the paralysis. In the infantile forms there is often arrest of development, especially of the bones. The electrical irritability is generally in proportion to nutrition, later on it may vanish altogether. Contractility to faradisation is lost earlier and more completely. By degrees various deformities occur, according to the degree and localisation of the paralysis, club-foot, scoliosis, contraction, the consequence of overbalance of the antagonists to the paralyzed muscles, luxations, etc. The hand shows at first flaccidity, then rapid wasting of muscles in all parts of the hand, but mainly on the thenar and

hypothenar eminences; and later there is contraction of the same nature as in cerebral hemiplegia. Some of the distortion in children is due to arrest of development. The paralytic contracture occurs in very various muscles and groups of muscles, and improvement, when met with, only advances up to a certain point.

Progressive Muscular Atrophy.—An affection mainly of the anterior horns. Various degenerative lesions of vessels are probably the primary cause of mischief. In the neuroglia there are granular bodies, cellular elements, and abundance of fibrillary tissue. There is an absence of some cells, and diminution in nutrition of those that remain. The cervical region is most affected; the anterior roots nearly destroyed. In the muscles there is simple atrophy of the primary bundles of fibres, with some increase of the interstitial connective tissue. The symptoms are primarily atrophy, which begins usually on the right side by atrophy of the short muscles of the thumb and hypothenar eminence. The hand an ape hand. The thumb is approximated to the second metacarpal bone. There is atrophy of the interossei, shown by the sinking in of the interosseous spaces, and increasing incomplete extension of the terminal phalanges. If the atrophy be extensive, the extensor communis digitorum, the antagonist muscle of the interossei, causes *main en griffe*, *i.e.*, great extension of the first phalanx and contraction of the two terminal ones. Atrophy of the lumbricales induces visible flattening of the hollow of the hand. (See *Figs.* 15 and 16), the dorsal and palmar aspects of the hand in progressive muscular atrophy. (See also *Fig.* 19), extreme progressive muscular atrophy, affecting all the muscles. Atrophy of the hand with partial contraction.

This lesion can be diagnosed from acute anterior poliomyelitis, in that in the latter paralysis precedes the atrophy; in progressive muscular atrophy the reverse is the case. In progressive muscular atrophy there is no marked reaction of degeneration until late, whilst in poliomyelitis it is early. The picking out of individual muscle-groups, and the presence of fibrillary twitching are diagnostic of progressive muscular atrophy, and the absence of hereditary influence.

Bulbar Paralysis.—This paper has nothing to do with the essential feature of this disease, the shrinking and atrophy of the ganglion cells of the nuclei of the hypoglossal and vagus nerves, and sometimes of those of the facial and abducens oculi. But this lesion is frequently accompanied by atrophy of the cells of the anterior horns, of the cord, and consequent atrophy of the muscles of the upper limb and especially of the hands. The bulbar symptoms separate this condition from progressive muscular atrophy, but the appearance of the hands

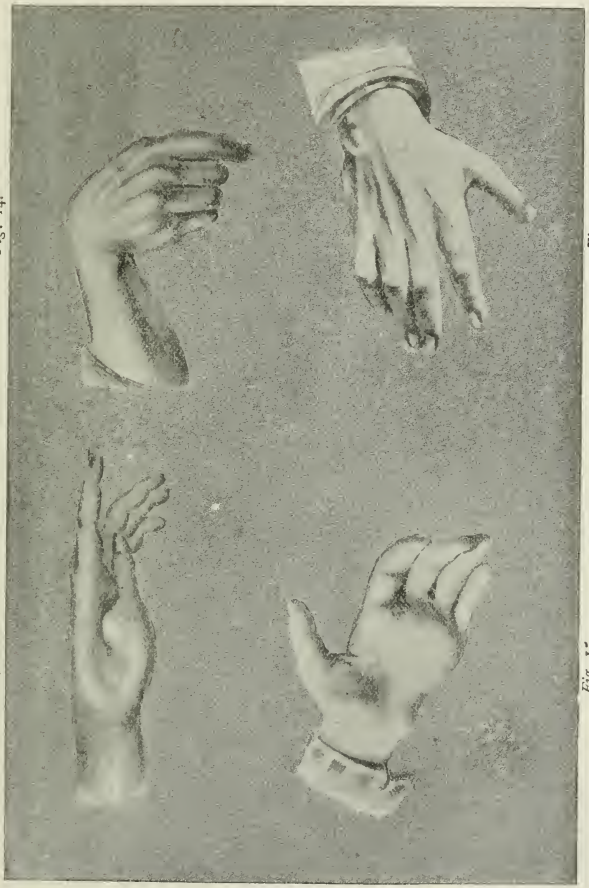

Fig. 13.

Fig. 14.

Fig. 15.

Fig. 16.

themselves is very similar. (See *Fig.* 18, atrophy of hand in a case of bulbar paralysis.)

Encephalitis Infantum.—Hemiplegia of the upper extremity is common. The hemiplegia often paretic rather than paralytic ; but movement is impaired partly as the direct result of the lesion, partly from arrest of development. When atrophy supervenes, there is no reaction of degeneration, and the electrical phenomena are normal. Contraction is a frequent sequence, and is due to atrophy of extensors and action of antagonist flexors, to unequal arrest of development, and to secondary degeneration. At a later stage ataxic or choreic movements may be met with (athetosis, hemichorea, etc.) and sometimes epileptiform attacks. No spinal lesion has been found. Laborde found in two cases a small quantity of reddish serosity in the lateral ventricles ; Vulpian, a slight softening with adhesion of the pia mater in the neighbourhood of the fissure of Sylvius, coinciding with a hæmorrhage of the left corpus striatum and of the thalamus. Probably atrophy only supervenes when there is atrophy of the motor ganglion cells. The inflammatory theory of this disease is rendered probable by the frequent thickening of the pia mater over the spot where sometimes a depression is found ; but records of the early history of this disease are wanting. Sometimes the paralysis and contraction in these cases may almost disappear under the treatment of exposing the median and ulnar nerves to the influence of the anode of the constant current, and simultaneously by faradising the antagonists of the contracted muscles, and especially of the radial nerve. Prof. Brenner, of Leipzig, published two such successful cases in "Schmidt's Jahrbücher," 1879. An interesting case was published of muscular atrophy with partial ophthalmoplegia, external and internal.

Syringo-Myelia is the formation of a cavity in the cord elsewhere than in the central canal. The usual course is the formation of a glioma, either from the ependyma of the central canal or in its vicinity, and secondary degeneration and the formation of a cavity. The cavity is generally near the centre, and most frequently extends into the posterior columns. If the anterior horns are involved, extensive atrophic paralysis supervenes, simulating amyotrophic lateral sclerosis. The symptoms vary according to the height at which the cord is involved. To speak only of the upper cord ; in the upper part of the cervical bulb, the act of raising the hand to the mouth is affected, an act requiring the deltoid, biceps, brachialis anticus, and supinator longus. In the mid-part of the cervical bulb, the act of placing the hands on the anterior and posterior surface of the thigh, requires the scapular muscles, flexion and extension of the forearm

Fig. 19.

Fig. 18.

Fig. 17.

Fig. 20.

and wrist. In the lower part of the cervical bulb, the muscles specially relating to flexion and extension of the hand are involved. Amongst other symptoms, sensibility is more or less altered. There may be loss of sensation, of pain, and of temperature in the atrophied parts, whilst the sense of touch and of location may be preserved.

So also in syphilis of cord, in various spinal tumours, in tabes dorsalis, similar symptoms of atrophic paralysis may be found, if the lesion primarily affect the anterior cornea; or if, as is sometimes the case in the later stages of tabes, the degenerative process passes transversely from the posterior root-zones to the more anterior structures.

The second group of atrophies has been already briefly touched upon under the heading of various forms of neuritis. As an example of this, see *Fig.* 21, after M. Paul Blocq. Neuritis of ulnar nerve after operation on the ring finger, with consequent atrophy and some contraction.

In the third group of atrophies, following affections of the spinal membranes, the most prominent example is found in **Pachymeningitis Cervicalis Hypertrophica.** In this condition there is inflammatory thickening of the dura mater of the cervical region of the cord, leading first to compression of the posterior, and afterwards of the anterior roots. Eventually the cord suffers as in ordinary compression-myelitis. The posture of the hand is determined by the paralysis of certain groups of muscles, especially of those innervated by the ulnar and median nerves. The radial is seldom involved. A corresponding atrophy of the affected muscles occurs *pari passu* with the paralysis. If the lesion be in the upper part of the cervical cord, from which the nerves forming the brachial plexus spring, the carpus is extended at right angles to the forearm, from paralysis of the flexors of the carpus and of the thumb, and the contraction of the non-paralyzed antagonist extensores carpi radialis et ulnaris, and the extensors of the thumb. (See *Fig.* 30, after Charcot.) If the lesion be a little lower down, the position of the hand is directly reversed, being flexed to a corresponding degree, the paralysis being of the extensors of the carpus and thumb, and the contraction of the flexors. (See *Fig.* 29, after Charcot.) The cutaneous and deep reflexes of the arms are absent. There is reaction of degeneration. Possibly dependent on some mal-nutrition of this portion of the cord, although not of a character sufficiently coarse to be recognized *post mortem*, is the so-called **Hysterical Atrophy of the Hand** (*Fig.* 19, after M. Gilles de la Tourette and M. Dutil), with flexion of the two last phalanges into the palm of the hand, especially those of the index and medius. (See *Fig.* 22, after M. Gilles de la Tourette).

The fourth group of atrophies, the primary myotic, finds perhaps its best example in pseudo-hypertrophic paralysis. Erb includes the atrophies of this kind under the term "Dystrophia Muscularis Progressiva." These myopathics are much more common than muscular atrophy of the myelo-pathic form. Many transitional varieties exist, and numerous cases in which different forms have been observed in the same family. All such varieties are probably more or less hereditary. It is only in rare cases that the upper extremity is involved in pseudo-hypertrophic paralysis. The rule seems to be that before the affected part increases in size, atrophy of the muscle begins, either simple with striation retained to the last, or in the form of granular, or waxy, or perhaps colloid degeneration, and sooner or later with great increase of fat. Gowers thinks the morbid growth of connective tissue and fat in the place of muscle is a perversion of development. It is not easy to distinguish this form from a variety of myelo-pathic progressive muscular atrophy with lipomatosis and hyperplasia of the connective tissue, probably due to rheumatism or gout. The absence of the reaction of degeneration in pseudo-hypertrophy is a point in diagnosis, but this is often late in progressive muscular atrophy.

The fifth group includes all reflex atrophies, to which Charcot has especially drawn attention in speaking of the form that has its origin from affection of the joints. The atrophy is the direct result of irritation carried from the joint to the cells of the anterior horns. Increase of myotatic irritability, and the reaction of degeneration in cases of advanced atrophy, are prominent symptoms. In M. Déjérine's Clinique ("Brit. Med. Jour.," vol. i., p. 908, 1889) is mentioned an instance of chronic fibrous generalised rheumatism, attacking all the articulations of the body, accompanied by muscular atrophy, glossy skin, vitiligo, and interstitial nephritis. This may or may not be an example of reflex atrophy.

The writer has met with a case of a man in middle life, in whom the muscles of the upper and lower limbs had wasted almost absolutely in connection with rheumatoid affections of many of the joints. He made a good recovery. It is possible that in many cases one and the same condition may induce the arthritis and the lesion of the cells of the anterior horns; and this all the more that so-called rheumatoid arthritis seems often to own a strumous origin. (*Fig.* 20, Muscular Atrophy with Chronic Articular Rheumatism.)

It is impossible adequately to pourtray in picture the phenomena of hyperkinesis. Although a tremor can be measured, the movement of the hand caught however instantaneously, represents only a single position, and not a tremor. Even athetosis, which has been often

pourtrayed, gives practically no idea of the bizarre movements of this peculiar condition, the posture of the hand and of each finger changing incessantly.

The term hyperkinesis includes tremor, simple, toxic, paroxysmal, senile, hysterical, that due to disseminated sclerosis, and to paralysis agitans; chorea simple, pre-hemiplegic, and post-hemiplegic; ataxy, as in tabes dorsalis, ataxic paraplegia, Friedrich's hereditary ataxy, and peripheral tabes; convulsion; contracture, post-hemiplegic, hysterical, due to amyotrophic spinal paralysis, spastic spinal paralysis, cervical myelitis, spinal tumour, and Thomsen's disease; contracture from injury to nerve; tetany; and local cramp.

Charcot speaks of four varieties of tremor, the tremor of disseminated sclerosis, slow and over a wide area; that of paralysis agitans, the oscillations being rythmical, but of small extent; hysterical tremor, with oscillations mid-way between the two preceding varieties; vibrating tremor, with eight or nine oscillations per second, including alcoholic and mercurial tremor, that of general paralysis, and that in Graves' disease. Of these the three first show individual tremor of fingers, the last does not.

Disseminated Sclerosis rarely occurs after thirty-five. The lesions are discoloured indurated patches (thickening of trabeculæ of neuroglia, proliferation of nuclei, large spider cells, gradual transition into delicate fibrous connective tissue), not attacking the same region of cord at different heights, but in various situations; affecting too the cerebral cortex, and the central white substance, the walls of the ventricles, the corpus callosum, the basal ganglia, pons, and cerebral peduncles, often the central white substance of the cerebellum, the floor of the fourth ventricle, the nerve roots and nerve trunks. The cause of the tremor is thought by some to depend on the persistence of the axis cylinders in the sclerosed patches in the cord, but a more probable cause may be sought in the fact of these patches being found in the pons, the medulla oblongata, and the crura cerebri. Symptoms vary according to the position of the lesions, but one chief diagnostic point is the occurrence of tremor on any attempt at voluntary action, the call for nutrition by the attempt at extra work being very partially responded to. The head is involved and the tongue, and nystagmus is often present. The tremor, however, does not absolutely cease during rest from voluntary movement. Contracture is early, and eventually is well marked.

Paralysis Agitans is not necessarily a senile disease, but it occurs rarely before thirty-five. Seeligmüller ("Schmidt's Jahrbücher," 1875), gives an instance in early childhood. The lesions found are various.

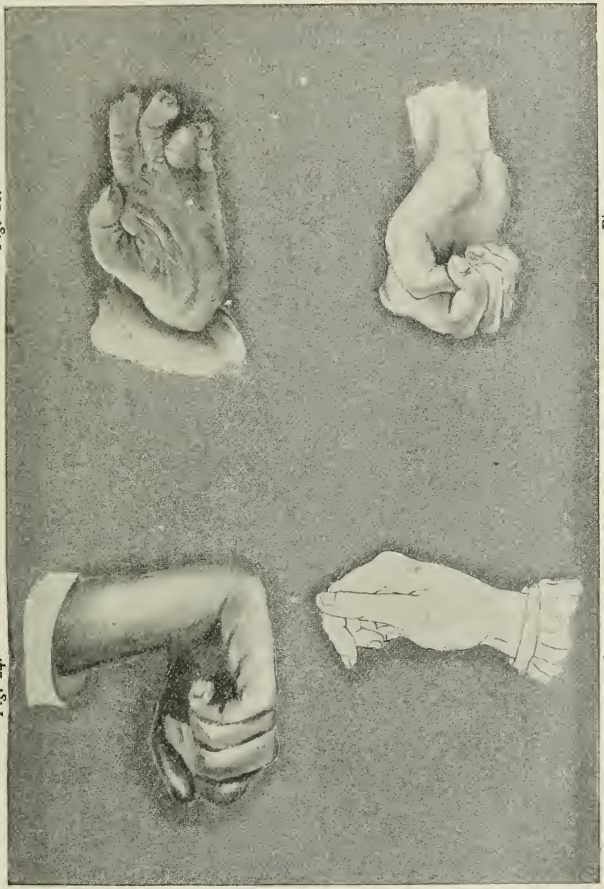

Fig. 21.

Fig. 22.

Fig. 23.

Fig. 24.

The cortex of the cerebellum has been found involved, or there may be induration of the pons, or obliteration of the central canal of the cord by proliferation of the epithelial elements which line the ependyma ; but in many cases no lesion has been recognized. The tremor, which affects the hands very specially, interferes with the force and continuance of intended movements, which, however, retain their direction. Some amount of the tremor is independent of voluntary movement, but in this connection it is well to remember the tendency to purposeless movements of the hands, so common in old people, without any definite lesions of the nervous centres. There is seldom any tremor of the head. The movement of the fingers reminds one of an attempt to crumble a piece of bread. There is rigidity of certain muscles, especially of the thumb and index finger, which are opposed and extended, as if to hold a pen ; or the fingers are alternately flexed and extended at their several articulations. The movements may persist even during repose.

In senile tremor, that slightly differs from paralysis agitans, the head is mainly affected.

Chorea, minor and major, shows almost every possible contortion of the hand ; seldom paralysis, but incessant movement, not rhythmical enough to be called tremor, too violent to be simple ataxy : a want of co-ordination of all the muscles affecting the wrist, hand, and fingers. Habit spasm is scarcely more than a variety of chorea minor, but it is more commonly manifested in movements of the face and shoulders, than of the hand.

Hemichorea may exist for several days, and then be followed by hemiplegia, and it is often associated with hemianæsthesia. The interossei are frequently affected, and the movements will consist of varying degrees of flexion and extension of metacarpo-phalangeal articulations. The lesion will generally be found in the internal capsule, and the foot of the corona radiata. In post-hemiplegic chorea the lesion is generally in a similar situation. The phenomenon never occurs in a completely paralyzed limb, but is usually associated with marked diminution of the paralysis. But post-hemiplegic chorea sometimes follows a partial atrophy of brain, dating perhaps from early childhood, and persistent hemichorea is evidence of somewhat less extensive injury than the more usual hemiplegia with contraction would be.

A variety of post-hemiplegic chorea is seen in athetosis. This seems to be a connecting link between tremor and ataxy. The fingers are seen in slow unrhythmical movements, over which the will has small control, which are generally but not always unilateral, and may persist during sleep.

In **Locomotor Ataxy** the hands are usually affected late. The writing is stiff and awkward, the hand sometimes flying off at a tangent to the top of the paper. The fine movements of the fingers are impeded. There are various paræsthesiæ, and often some anæsthesia. The pathology is well-known and the chief points for diagnosis.

In **Ataxic Paraplegia,** as in tabes dorsalis, the lower portion of the cord is mainly and primarily affected. There is sclerosis of the posterior and lateral columns, chiefly of the dorsal region. The direct cerebellar tracts, however, may escape, but this is not always the case. There is great increase of myotatic irritability. The upper limbs usually show inco-ordination, and very rarely paralysis.

In the **Hereditary Ataxy of Friedrich,** the upper limbs become ataxic at a later date than the lower. The posture of the hand is not abnormal, but the movements are ataxic, especially those that require much co-ordination, such as sewing, writing, etc. The lesion is sclerosis of the posterior columns in all patients, with implication also of the posterior roots. The direct cerebellar tracts are often involved, and the anterior pyramidal tracts, and Clarke's columns.

A less common form is **Peripheral Tabes,** in which lightning pains and various disturbances of sensation occur, with ataxy, and without loss of deep reflexes. The spinal cord and nerve roots are healthy, but there is marked peripheral neuritis.

The condition of the hand in **Clonic Convulsion** is not always the same. The flexion of the thumb across the palm of the hand is tolerably uniform, but the flexion of the fingers may be complete, or more usually very partial. The whole hand may be flexed on the wrist, or distorted most commonly towards the radial side. The clonic convulsion of the flexors of the fingers goes on with rapidity during the clonic stage of an epileptic fit, whilst frequently the tonic flexion of the thumb persists during the period of convulsion of the fingers. Paresis is met with in the parts that have been first and most intensely convulsed. Unilateral tremor in epilepsy has been spoken of as a diluted convulsion, perhaps midway between *le petit mal* and *le grand mal.*

In **Hysterical Epilepsy,** besides the semi-voluntary positions expressive of phases of emotion, such as rage, threats, sadness, devotion, sexuality, and fear, the hands are seen in the position of epileptiform contraction of the thumb across the hand, or of contraction of the fingers on the hand, and partial contraction of the hand on the wrist. Sometimes there is deviation of both hands to the ulnar side, that simulates the movements of acrobats. Hysterical epilepsy is a condition that probably has intimate relations with functional pertur-

bation of the hinder segment of the internal capsule. (See *Fig.* 26.) Hysterical Paralysis with Œdema, after M. Gilles de Tourette, and Dutil.)

Hysterical contraction comes on suddenly, and is often preceded by an injury. This mode of onset differentiates it from post-hemiplegic contracture, spastic paralysis, and disseminated sclerosis, where the onset is more gradual. The posture of the hand may be that of intense contraction of the hand on the wrist, and of the fingers on the hand. It is probably due to inactivity of the central cells, cerebral or higher spinal. (See *Fig.* 22, Hysterical Contraction of the Hand, with Atrophy, after M. Gilles de Tourette and Dutil.)

In **Post-Hemiplegic Contracture** the upper extremities are not invariably more affected than the lower. The two kinds of it may co-exist, or may occur separately: (1,) Atrophy of the extensors of the fingers, where the resulting contraction is due partly to the action of antagonist muscles; (2,) Contraction, the result of sclerosis of the grey matter itself, or of secondary degeneration of the lateral pyramidal tracts in the spinal cord. The forearm may be much contracted on the arm, the wrist on the forearm, the fingers on the hand. Sometimes there is only contraction of some fingers, and the index and thumb may escape. This form has been thought to depend on the cutting off of the cerebral influence from the affected muscles, and of the consequent unrestrained influence of the cerebellar centres upon them. (See *Fig.* 23, Post Hemiplegic Contraction of some Fingers.)

In **Amyotrophic Lateral Sclerosis,** the upper extremity is first attacked. The cause of the contraction of the hand is somewhat similar to that in post-hemiplegic contracture, viz., rigidity and contracture, due mainly to the sclerosis of the lateral columns, but partly to the action of the antagonists over the atrophied muscles of the hand. The atrophy of the muscles of the thenar and hypothenar eminences is almost as great as in progressive muscular atrophy; and all the extensors of the wrist and fingers participate. The interossei are especially affected; the flexors of the hand and fingers later on. From some cases on record, it is certain that degeneration of the lateral columns does not necessarily lead to rigidity and contracture. Charcot thinks that the immediate cause of contraction is in the grey matter, and not in the lateral columns themselves. (See *Fig.* 24, after Charcot.) Sometimes the condition is accompanied by closure of the lower jaw. ("Jaw-jerk.") (Dr. Beevor, Brain, vol. viii., p. 517.)

In **Spastic Spinal Paralysis,** with spastic gait, the force of the disease falls on the lower extremities. Even in the rare unilateral form the leg is affected first and more decidedly. The upper limbs are only

Fig. 25.

Fig. 26.

Fig. 27.

Fig. 28.

involved, if in the cord the lesion lies above the cervical bulb. Tremor is rare in the upper limbs, but the wrist and fingers may sometimes be hyper-extended. The tendency to muscular spasm is of a tonic rigid kind, especially in the acts of abduction and extension.

Various contractions are met with from injury to nerve. In a recent case under the care of the writer, a lady had had fracture of the right humerus. As the fracture united, there was found gradual contraction of the ring and little finger; all the phalanges of the latter were contracted, but only the two first of the former. Similar instances are numerous. Mr. Hutchinson mentions a case where rupture of the roots of the brachial plexus had occurred in an infant during birth, and had been followed by the contraction of the fingers into the palm of the hand, with stiffness of shoulder and elbow.

In **Tetany,** the hands become stiff at first, then fixed. The fingers are flexed at the metacarpo-phalangeal joints, and extended at others. The thumb is adducted, and in contact with the index finger, or flexed beneath it; whilst spasm in the thenar and hypothenar muscles renders the palm hollow. The position of the fingers is due to spasm of the interossei muscles. There is fibrillary tremor in the affected muscles. No actual paralysis. The lesion is probably central.

Hoffman thinks the removal of the thyroid gland is one of the etiological factors.

The **Contraction of Arthritis** is a neurosis. No pathological anatomy is known. The contraction is first spasmodic, but later becomes permanent from abnormalities due to long continuance in one position. The articular affection reflexly irritates the spinal centre, sometimes causing exaltation of the properties of the nerve-cells, and so stimulating to contraction; sometimes causing depression of their power, "amyotrophic paralysis"; sometimes both at once. The extensors of the affected joints are mainly involved, the posture of the fingers being either flexion of the first phalanx, forced extension of the second, and flexion of the third, or flexion of the two first phalanges, and extension of the third. (See *Fig.* 3, Indirect Paralysis of Flexor Sublimis Digitorum from Gout.)

Local Cramps are generally associated with over-work of certain muscles. There are numerous varieties, writer's cramp, cramp from sewing, piano and violin playing, milking, from the use of Morse telegraph machines, from cobbling, or smith's work. Dr. Poore describes a case of sawyer's cramp, in which every movement could be made by the right hand except sawing. No pathological anatomy is known, though Dr. Poore found in a case of tailor's cramp the right

median nerve distinctly tender. The symptoms may be spastic, tremulous, neuralgic, or paralytic. Usually in writer's cramp only some of the small muscles of the hand are involved (interossei, lumbricales, the muscles of the ball of the thumb). They are in a state of clonic, more frequently of tonic extension or flexion. Occasionally the larger muscles of the forearm, arm, and shoulder may be implicated. Dr. Poore finds that the muscles subjected to prolonged strain are more likely to be affected than those in which contraction and relaxation quickly alternate ; and therefore the muscles of pen-prehension suffer more frequently from over-use than those of pen-movement. Coarse movements can be made, but not fine ones. Some observers have thought the phenomena due to disturbance of the co-ordinating centre.

It seems possible to include the two next varieties of morbid hands amongst the illustrations of nerve disease, although neither pain nor any other symptom point to lesion of the nervous system.

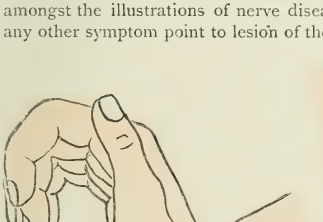

Fig. 29.

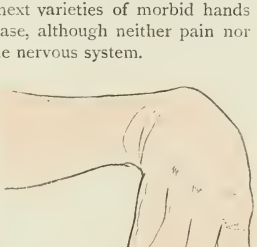

Fig. 30.

In **Acromegaly** there is progressive increase in the size of the hands. They are large and square, with the greatest thickness on the palmar surface, giving the sensation of excessive subcutaneous adipose tissue. The thyroid is sometimes found wanting, but it may be quite healthy. The condition of the hands differs from the waxy mask-like appearance of the hands in myxœdema. The whole body is generally involved, the face, especially its lower half, the trunk and abdomen, and the lower extremities. The muscles are rather weak ; the bones enlarged. In the skeleton of limbs from cases of acromegaly, hypertrophy shows itself by preference in the bones of the extremities, and in the extremities of the bones. There is hypertrophy of the vertebræ, the sternum, and the clavicles, dilated frontal sinuses, hypertrophy of the pituitary body,

with enormous dilatation of the sella turcica, persistence of the thymus, hypertrophy of the spinal cord, and of the ganglia of the sympathetic system. (See *Fig.* 25, after M. Pierre Marie.)

Morvan's Disease, analgesie paraplégique. The chief features of this disease are pains in the fingers, followed first by paralysis, and muscular wasting, especially of the hand, and afterwards by anæsthesia and analgesia. Then follow whitlows, indolent abscesses on the hands, and sloughing of some part, usually of the last phalanx of one or more fingers. These abscesses are characteristic of Morvan's disease. The affection is generally symmetrical. Some observers believe that the symptoms depend on syringo-myelia, but there is far more atrophy in most cases of syringo-myelia, and this lesion is seldom found in Morvan's disease. The lesions that have been found in fatal cases are hyperplasia of the connective tissue in the nerves, and an abnormal development of the interstitial tissue occupying the posterior columns, posterior corrua, and central grey matter of the spinal cord. (See *Fig.* 28, after M. Georges Guinon and M. Dutil.)

In **General Paralysis,** the hands are often tremulous in the early stages. As the disease progresses, there is a certain want of co-ordination in minute movements, as seen in writing for instance, or manifested by fumbling at the handle of a door. Later on, more decided paralysis.

But another condition of the hand has been lately described by M. Ch. Féré. He speaks of the skin of patients in general paralysis being sometimes the seat of a scaly eruption, resembling in its intense form ichthyosis, and in its less intense form, pityriasis. In the hand there is no scaly condition, but the skin has lost its suppleness and elasticity, and is dry, discoloured, covered with wrinkles and numerous folds. (This state is shown in *Fig.* 27, after M. Ch. Féré.) There is also an increase of volume of the first and second phalanges of the medius, and especially of the articulation of these two phalanges.

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The Character of the Sputum

As an Aid to Diagnosis.

By FRANK J. WETHERED, M.D., Lond., M.R.C.P.

Pathologist to the City of London Chest Hospital.

THE examination of the sputum has within recent years received a fresh impetus from the epoch-making discovery by Koch of the tubercle bacillus. By "sputum" is meant all matters coughed or hawked up from the air-passages, including the secretions from the buccal cavity.

The naked-eye characters of the expectoration received much more attention from the older writers, before the physical examination of the chest by percussion and auscultation arrived at the present state of exactness, and before the clinical thermometer had been brought into routine use. Thus, the most observant of all observers, Lænnec, described five varieties of bronchitis, each characterized by a peculiar form of sputum. Not only were the appearances of the secretion noticed, but attention was directed to its smell, taste, reaction, etc.

With our modern methods of physical examination much less stress is now laid on the macroscopic characters of sputum, but with the aid of the microscope a diagnosis which may be doubtful or extremely obscure (*e.g.*, actinomycosis) may be corroborated or established.

The naked-eye appearances may, however, be of great assistance to the physician, especially as regards prognosis.

Sputum may be described as mucous, muco-purulent, or purulent, according as it is transparent, semi-opaque, or resembles the matter drawn from an abscess. To attempt to describe its examination under these heads would be manifestly absurd, as instances of each are found in the course of most diseases of the respiratory organs.

Attention will only be drawn here to the main points of the macro- and microscopic examination of sputum, as it would require an article many pages in length to give a full description of all the normal and abnormal constituents.

The sputum is best collected in conical glasses, as the stratification characteristic of some forms is thus well shown.

There is, perhaps, no disease in which the expectoration varies more than in *bronchitis*. In the acute form it is at first scanty, white, and

viscid, often causing needless alarm by being streaked with blood. At a later stage it is more copious, and greenish in colour. In chronic bronchitis all varieties may be met with. That which is most common consists of a dirty grey, yellow, or greenish mass, semi-opaque, and very tenacious. It is partially aerated, and generally free from odour. In other cases the mucus forms pellets floating in a thinner fluid. Valuable information as regards treatment may be gathered from carefully noticing the consistency of the sputum, as, for instance, when it is very tenacious and difficult to expel, **Antimony** in large and frequent doses is indicated, whilst the time for the cessation of the drug is indicated by the secretion becoming thin and diffluent.

In *putrid bronchitis* the expectoration is thick, greenish-brown, and has a very penetrating and foul odour.

In *phthisis* the sputum again varies greatly; that which is most characteristic consists of opaque, greenish discs, about the size of a sixpence, having a faint, sweetish odour, and exhibiting, on careful examination, small opaque granules, which on appropriate microscopic examination are found to contain elastic elements and tubercle bacilli.

This may be the best place to refer to the occurrence of *hæmoptysis*. Slight streaking of the expectoration is generally of no diagnostic value, but when in considerable quantity it is important to ascertain whether it be true or false hæmoptysis. Grosser characteristics of blood evacuated from the lungs are its bright colour, frothy appearance, and alkaline reaction. In spurious hæmoptysis the blood is generally more watery, and not aerated. Its source, however, is more easily detected clinically than by an inspection of the contents of the spittoon. Great help is afforded by microscopic examination for micro-organisms, especially tubercle-bacilli, elastic tissue, cancer cells and débris of parasites (hydatids), etc.

In *croupous pneumonia* the sputum at the outset is similar to that of early bronchitis; later it assumes the characteristic rusty tinge, is very tenacious, contains no air, and is almost translucent. The colour is probably due to the presence of dissolved hæmoglobin (Jacksch) rather than to the few red blood corpuscles which are present. Instead of having a reddish tinge, the sputum at this stage may be grass green in colour, due to the conversion of hæmoglobin or hæmatin into bilirubin, in its turn oxidised to biliverdin. As the disease progresses, the expectoration becomes more abundant and watery; its colour is now a pale yellow, and coagula become more numerous, and finally it becomes colourless.

The most characteristic of all sputa, as judged without the aid of the

microscope, is that associated with *plastic bronchitis*. In this disease the sputum consists of small pellets covered with mucus and blood. If these be thrown into water they easily spread out, and are then seen to consist of casts of some parts of the bronchial tree. They are usually about one and a half to two inches in length ; their diameter is narrow, rarely being larger than that of a goose's quill ; their colour is grey, or yellowish-white. They divide dichotomously, so that the branches gradually diminish in length and thickness. On closer examination they will be seen to be made up of a number of concentric laminæ, separated at intervals by narrow spaces, and they present a central cavity, generally containing mucus or bubbles of air. Under the microscope they are found to consist of a fibrillar or hyaline base, in which are embedded epithelial cells and blood corpuscles.

Bodies very similar to these casts are occasionally seen after an hæmoptysis ; they are homogeneous in structure, more transparent and not so elastic as the "stolons." They are formed in the air-passages as the result of the hæmorrhage.

In *bronchiectasis* the sputum is thin, and has an offensive penetrating odour. When allowed to stand for some hours it separates into three layers, the uppermost of which is semi-opaque, greenish-yellow, and frothy ; the middle is a transparent, albuminous liquid ; and the undermost, made up of pus cells, débris, and plugs of decomposing exudation, is opaque, and of a dirty yellow colour.

In *gangrene of the lung* there is great similarity, except that the sputum is more scanty, and is darker from admixture of decomposing lung tissue and blood. Although there is great destruction of lung tissue, yet no elastic fibres are found, as in the expectoration of bronchiectasis. This absence of the evidence of mural disintegration is apparently due to the presence of a ferment, which acts like pancreatic juice, and so causes solution of the elastic tissue.

In cases of *abscess of the lung*, the sputum consists of almost pure pus ; it has generally a rather fœtid smell, and on standing separates into two layers, of which the upper is watery and covered with froth, whilst the lower consists of pus cells. This deposit is interesting microscopically. Destruction of lung tissue is indicated by the presence of elastic tissue, showing complete alveolar arrangement. Pus cells, of course, are very numerous, and exhibit fatty degeneration ; crystals of hæmatoidin and cholesterin are also present, as well as leucin and tyrosin.

Various varieties of *pigmented sputa* result from the introduction of foreign particles, due to the inhalation of dust, and have little clinical interest. The sputum is sometimes coloured yellow, owing to the presence of bile.

There is a peculiar form known as "*prune-juice*" expectoration. This results from the exudation of a frothy, watery, dark red fluid, and occurs in cases of pneumonia assuming an unfavourable aspect, especially in alcoholic subjects.

Passing now to the microscopic examination of sputum, far more exact and valuable information can be derived. Owing to limited space only a bare outline of the various methods can be given.

Of most practical interest is the search for *tubercle bacilli*. In all cases of doubtful chest disease, this has become almost a matter of routine. A great number of processes have been described, and a new one is introduced every few months. After considerable experience the author can confidently recommend the following as being speedy and reliable. The expectoration is thrown on to a plate, preferably a black vulcanite one. By means of scissors and forceps any small opaque particles are removed and placed on a cover-glass ; a second glass is then laid on it, and the specimen carefully spread out between the two by gentle pressure ; any excess escaping from between them is wiped away with a soft cloth. The glasses are then carefully separated by sliding them apart. Two films of sputum are thus obtained and allowed to dry, this process being hastened if desired by passing the glasses to and fro above a lamp. The films are then fixed by passing the glasses rapidly through the flame of the lamp three times, prepared side uppermost. A solution (Neelsen's) of the following composition is then placed in a watch-glass, viz., 1 part of fuchsine dissolved in a 5 per cent. watery solution of 100 parts of carbolic acid and 10 parts of alcohol. This is heated until steam commences to rise, when the glasses are placed in it, prepared side downwards. They are allowed to remain two minutes, and are then removed and rapidly dipped in 25 per cent. sulphuric acid, and then washed in water. This process is repeated until only a faint lilac tint remains. The bacilli are now stained, but their recognition is rendered easier if the specimens are counter-stained in methyl blue for half a minute. This solution has the following composition, viz., 2 parts of methylene blue, 15 parts of alcohol and 85 parts of water. The preparations are finally washed in water, dried, and examined in water, glycerine, or balsam.

Tubercle bacilli appear as short rods, rounded at the ends, having an average length of half the diameter of a red blood corpuscle. They may be either straight or slightly curved, and occasionally exhibit a beaded appearance, due to an unequal distribution of colour, suggesting the presence of spores. Koch considers that these are true spores. Another distinguishing feature is their arrangement in small groups,

two or three bacilli lying cross-wise, or at angles to one another, in the interstices of the thick secretion.

If tubercle bacilli be found in the sputum, the patient from whom it came has a tubercular process going on somewhere in the respiratory tract, where, the stethoscope or laryngoscope will soon discover. The numbers in which they appear can be taken as no guide to the rate of progress or extent of the disease, though it is held by many that their continued presence is evidence of activity. The presence or absence of "spores" also has no practical bearing in prognosis. A negative result is of little value until repeated observations have been made.

The only other micro-organism that can be considered here is the "*pneumo-coccus.*" Ellipsoidal, round, or rod-like bodies, surrounded by a gelatinous capsule of corresponding shape have been found in the rust-coloured sputum of croupous pneumonia. As regards the diagnostic value of these organisms no reliance can be placed, as bodies practically indistinguishable from them by the microscope occur under other conditions.

Passing on now to the microscopic examination of sputum without the aid of stains, the most important is the occurrence of *elastic tissue.* In order to demonstrate it, small opaque portions should be picked out as recommended in the search for tubercle bacilli, placed on a slide and carefully distributed by moderate pressure on the cover-glass; their recognition may be aided by running in a drop of a 30 per cent. solution of caustic potash, which clears the specimen by dissolving other matters. The characteristics of elastic fibres are, their transparency and sharpness of outline, tendency to break across without fraying, yellow colour and indestructibility, their contour marked by wide curves and hoops, their angular section and homogeneity, and their branching and anastomosing in a reticular manner. This tissue may be derived either from the parenchyma of the lung, from the mucous membrane of the respiratory tract, or from the vocal cords and epiglottis. That from the larynx consists of comparatively large masses of undulating matted fibres, similar in nature to yellow fibro-cartilage. That from the parenchyma of the lung has a distinctly alveolar character, arranged in bold curves and hoops. The fibres from the other parts of the mucous membrane are also discrete, but lack the alveolar arrangement. Sir Andrew Clark has shown that the presence of complete alveolar rings, which are at the same time very elastic, is an indication of rapid disintegration of lung tissue; that small "tailed" pieces which have lost their elasticity bespeak a more chronic process, and where the fibres are found encrusted with lime salts, may be regarded as denoting an old lesion.

The presence of elastic fibres does not necessarily denote a tubercular process, as they are also found in cases of bronchiectasis and abscess of the lungs.

Four varieties of *epithelium* may be recognized in expectoration. They are squamous cells, derived from the buccal cavity, pharynx, and upper part of the larynx; columnar ciliated cells from the greater portion of the respiratory passages; columnar cells without cilia from the nasal meatus and terminal bronchi; and lastly, cubical cells from these terminal bronchi and alveolar walls. They have little diagnostic value. Pus cells, mucus and leucocytes are constantly present, but unless the first-named occur in large numbers, no importance can be attached to them.

Interesting bodies are found in the expectoration of patients suffering from asthma. These are the "*Curschman's spirals*" and the "*Charcot-Leyden*" *crystals*. The former consist of semi-transparent spiral formations, which usually have the following arrangement: In the centre is a highly refracting wavy thread—"central thread"—apparently composed of epithelial cells cemented together by fibrinous exudation. Round this is coiled and twisted a much wider ensheathing layer of mucoid material. The crystals take the form of colourless, pointed octahedra, which are insoluble in cold water, ether, alcohol, or chloroform, but easily soluble in alkalies, mineral acids, warm water, and acetic acid. They have also been found in bronchial stolons and in the sputum in various other conditions.

Numerous other bodies occasionally occur in the expectoration, but they are exceptional, and more extensive articles must be referred to for their description; but enough has been said here to show that very great help may be obtained from a careful examination of the contents of the spittoon, both as regards diagnosis and prognosis.

Part III.—NEW TREATMENT.

A Dictionary of New Treatment in Medicine and Surgery, 1891.

ABDOMINAL INJURIES. *A. W. Mayo Robson, F.R.C.S.*

Laparotomy for traumatism is daily becoming such an important factor and such a universally recognized method of procedure in modern surgery, that it needs neither eulogy nor defence. The rule seems well-established, that in cases in which perforation of the peritoneal cavity has occurred, abdominal incision should be promptly done and the viscera carefully examined.

The propriety of surgical interference depends on one of two things : (1,) Dangerous internal hæmorrhages ; (2,) Visceral wounds of the stomach or intestines large enough to permit of extravasation.

Dr. Senn in a paper read at the Berlin Congress of 1890, insists on the extreme value of the hydrogen gas test used under complete anæsthesia, although in the hands of other operators, the method does not seem to have always been a success ; and Dr. Dalton of St. Louis, speaks of it as having been actually injurious.

Dr. Senn prepares his patient before employing the hydrogen, by giving a salt water emetic if the stomach contains food, and clearing the rectum and colon by means of copious enemas of luke warm water to which is added a table-spoonful of salt. He also administers a hypodermic injection of $\frac{1}{4}$ gr. of morphia and $\frac{1}{100}$ gr. of atropine, before the anæsthetic is given. If there is much prostration 2 ozs. of whisky diluted with 4 ozs. of warm-water is given by the rectum.

If the abdomen be opened for hæmorrhages, digital compresssion of the aorta and packing with sponges are resorted to, in order to save loss of blood, until the bleeding points can be found. During the course of the operation, inflation is employed through the visceral wounds, in order to discover unseen lacerations, thus avoiding the necessity of extensive eventration, and preventing non-success by the leaving of undiscovered perforation, which figure so largely as a cause of death in laparotomy for gun-shot wounds of the abdomen.

Lateral apposition with decalcified bone plates, omental grafting, irrigation of the abdominal cavity, and drainage, form important points in the technique of the operation.

Dr. Senn gives opiates after the operation, in order to ensure rest; but if symptoms of peritonitis set in, a brisk saline cathartic is given at the end of forty-eight hours.

Dr. Stimson stated in an address before the New York Academy of Medicine that the integral statistics of three hospitals in New York, previous to 1885, contained twenty-three cases of gun-shot injuries of the abdomen, supposed to be perforating, with fifteen deaths, a mortality of 65 per cent., and that the statistics of the same three hospitals since 1885, gave sixteen cases of laparotomy for gun-shot wounds of the abdomen with thirteen deaths, a mortality of 81·2 per cent. He therefore argues that in the present state of our knowledge, it cannot be said that either interference or non-interference should be the rule of practice, and the surgeon may be guided by his own feelings and convictions, whether they lead him to seek to do as much good, or only as little harm as possible.

He recommends operation in cases seen early, but non-interference when a considerable time has elapsed since the receipt of the injury, and where the symptoms of septicæmia or peritonitis are present.

From a report of penetrating wounds of the abdomen presented to the Chilian Medical Congress, it would seem that the author, Dr. Barros Borgona, has some cause to congratulate himself on his plan of treating such cases, as a rule in an expectant manner, that is to say, without operation, but with ice and opium, and no food. Eight were cases of revolver wounds of which four recovered and a fifth lived for seven months, dying ultimately of tuberculosis. In two of the cases that recovered there was some doubt as to whether there was perforation, but in the remaining six there was no room for doubt. In one of the cases, which recovered, the stomach was wounded; in another the colon was wounded from behind. Forty-six penetrating wounds of the abdomen by sharp instruments are tabulated. Of these, thirty-one, or 60 per cent. recovered.

Dr. Keen suggests, in the "Annals of Surgery," for July, 1890, a method of diagnosing rupture of the bladder, using filtered air or hydrogen, such as Senn employs in his experiments on the intestine. If no rupture be present a tense tympanitic tumour will appear in the lower part of the abdomen; whilst if the bladder is ruptured, the air will escape into the cavity of the peritoneum showing that an operation is called for.

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Surg.," June, 1890; "Arch. für Klin. Chir." vol. xxxiv; "Ann. of Surg." Sept. 1890; "Lancet," Sept. 13, 1890; "Report of Chilian Med. Congr."; "Revist. Med. de Chir.," 1890.

ABORTION.

Synopsis.—(Vol. 1890, p. 106.) For the treatment of threatened abortion, **Rest**; small tonic doses of **Ergot** when there is hæmorrhage, or the use of **Viburnum Prunifolium**, (gr. ij of extract in pill, thrice daily). **Chloral**, combined with **Bromide of Potassium** or **Sodium** is useful for urgent nervous symptoms. In syphilitic cases, **Mercury** and **Iodide of Potassium**. For incomplete abortion, with continuous hæmorrhage, give **Ergot** for one week, and if this is ineffectual, clear the uterus with a dull curette or spoon, dilating the cervix previously, if required. Neuralgia may be the first symptom of abortion, and when occurring in anæmic patients, **Quinine** (gr. x, with Opium gr. j, bis die), is advised as sedative, to be followed by **Liquor Arsenicalis**; in gouty or plethoric patients, **Chloride of Ammonium** and **Bromides** are preferable.

ABSCESS AND FISTULA IN ANO. (See also "Fistula.")

Synopsis.—(Vol. 1890, p. 107.) After opening the abscess, syringe out the cavity and fill it with wool soaked in **Ol. Carbol.** 1 in 20. Next day remove this, and dress lightly with **Lot. Rubra, Lot. Nigra,** etc. The blind external fistula may be occasionally cured by injecting a strong solution of **Carbolic Acid**, or **Nitrate of Silver**, keeping the aperture well open. After operation, cleanse the wound daily by syringing with weak solution of **Condy, Sanitas**, or **Carbolic Acid**, and then dress with wool soaked in **Olive Oil**, or some lotion, as **Lot. Nigra, Lot Rubra, Weak Carbolic Acid, Sulphate of Copper**, etc., dressing it lightly, not stuffing it.

Fistula in children, caused by worms, is frequently cured by **Anthelmintics.**

ABSCESS OF THE LUNGS.

Synopsis.—(Vol. 1889, p. 27.) **Calcium Sulphide**, gr. $\frac{1}{100}$ to $\frac{1}{2}$, the small dose tending to check, the large to hasten suppuration.

ACNE ROSACEA. *W. Allan Jamieson, M.D.*

According to Unna redness of the nose is ordinarily due to acne rosacea, accompanied by dilatation of the blood-vessels, and is frequently caused by seborrhœa, which must be combated by ordinary means. When the case is one of simple acne rosacea, Unna recommends the internal administration of ¾ of a grain of **Ichthyol**, and at the same time prescribes lotions of the same substance dissolved in water. At night he recommends the application of an ointment composed of **Zinc** ointment 20 parts, **Rice Powder** 5 parts, **Sulphur** 2 parts.

Where vascular dilatation is a prominent element of the affection, Unna advises puncture of the dilated venous trunks with Hebra's instrument, the procedure to be repeated two or three times a week.

In light cases, and as a supplementary treatment in severe cases, he advises the use of **Ichthyol Soap**, while warm water should invariably be used for washing.

REFERENCES.—" Lyon Médical," June 1, 1890; " Therap. Gaz.," July 15, 1890.

ACNE VULGARIS. *W. Allan Jamieson, M.D.*

The medical treatment of acne is based almost exclusively on the employment of external remedies, with the regulation of the diet. Internal treatment has proved to be of but little avail. To this end excessive use of meats and spices should be forbidden, but the principal reliance must be placed upon the external use of topical applications, which may be either stimulating or destructive.

The first group comprises a series of remedies which exert a slight stimulating action on the skin, such as warm lotions repeated several times through the day, or spraying with watery vapour. Various soaps may also be employed, and friction with powdered soap will also give good results, if applied vigorously for five minutes when the acne occurs on the face, ten minutes when on the back. This process should be repeated twice daily until a certain amount of irritation is produced.

If these measures do not suffice to produce cure, Dr. A. Fournier recommends the application over the part of an ointment, consisting of 20 parts by weight of **Lard** or **Vaseline**, 2 parts **Precipitated Sulphur**, 3 parts **Essence of Rose**, or 15 parts by weight of **Sulphur** may be dissolved in 30 parts of **Camphorated Alcohol** and 250 parts of water. This lotion should be used in the evening, and not rubbed off till the following morning. The author states that this simple means will ordinarily suffice in slight cases. In some rebellious cases friction with **Oil of Cade** may be employed, or **Vigo's Plasters** will also sometimes give good results, and should be employed every night for five or six days successively. Black Soap produces the most intense irritation, and sometimes may even cause a true inflammation of the skin, so that the patient before its employment should be warned as to the symptoms which will attend its use. Here, also, the application should be made in the evening for four or five days in succession, and the soap only washed off on the following morning with warm water; emollients should then be applied for several days, and then the treatment re-commenced. At the end of six weeks the result is generally a satisfactory cure, although, unfortunately, in many cases, the treatment cannot be persisted in. If all these means fail, more energetic measures must be resorted to, of which the most simple is scarifying or cauterization by means of the ignipuncture.

Dr. Payne points out that the distribution of the comedones from which acne punctata arises is remarkable. The situations on which they are found are those which abound in rudimentary hair structures,

and in sebaceous glands connected with hair, those, which during the course of the evolution of the human species, natural selection had succeeded in almost entirely depriving of their hairy investment. They are generally connected with special glandular structures undergoing rapid development, and it might be that some chemical alteration of the blood tended to produce them.

Acne vulgaris is distinguished by the comedones being inflamed, the source of irritation being supposed to be due to the micrococci generally met with on the skin, but which did not grow unless under some favouring circumstances, like dampness or friction. Their mere presence on the skin was not sufficient to excite inflammation, but when the skin was unhealthy and the nutrition lowered, or when it was subjected to injury or friction, then inflammation began. The existence of saccharine materials in the blood had a great deal to do with the growth of these organisms in the skin, evidence of which was found in the occurrence of boils in diabetes ; and he was persuaded that excess of sugar in the food had very much to do with suppurating diseases of the skin in children.

The treatment was simple, but not always successful. Patients should be told to wash the parts at night with hot water, using a strong form of soap—soft soap in small quantities where the skin was thick. Friction with a towel should be applied to get the skin to act well and induce perspiration. If the comedones were abundant and were not removed by this, they might be squeezed out with any instrument which might be found suitable. Washing should precede the squeezing, and some lotion or application should be put on immediately afterwards, as the reappearance was due partly to the pressure irritating the neighbouring glands, and partly to some infecting material which spread over the skin. In acne vulgaris this should be supplemented by certain drugs, of which **Sulphur** was by far the most efficacious. Absolutely dry sulphur did not affect the tissues at all, but only began to act when it was absorbed, probably in the alkaline form, and that seemed to be the reason why they found **Alkaline Sulphur** lotions the most effective. To meet this, **Sulphur** and **Lime Water** were by far the most suitable, the strongest form of which was **Precipitated Sulphur** (15 grains), **Glycerine** (½ a drachm), **Spirit of Camphor** (5 minims), and **Lime Water** to 1 ounce, which might be diluted if the skin was delicate. When the mixture had been kept a little while it would form a sulphuretted lime solution. The lime water was rather strong for some skins, and **Rose Water** might be added. This should be applied with a sponge, cotton wool, or a rag, and allowed to dry, and then sponged off in the morning, and the skin

should not then be washed. If ointments were used, they should not be too strong. The **Sulphur Ointment** of the B.P. was far too strong for these cases; 15 grains of **Sulphur** to the ounce of **Soft Paraffin** or **Benzoated Lard**, with perhaps 10 minims of **Carbolic Acid** added, would be found more suitable. In order to make it alkaline, 15 grains of **Carbonate of Potash** might be added to the ointment. This treatment, though it might not entirely remove the disease in the case of young people, would succeed in curing attacks as they came on. If there was inflammation, the sulphur might be found too strong, and it would be necessary to use the **Perchloride of Mercury**, ½ grain, and **Almond Emulsion** to 1 ounce, which formed a very pleasant application. **Lead** or **Zinc** lotions might be used where there was much inflammation, but lead was not a desirable application for the face, as gas sometimes caused it to turn black, and it should certainly never be used in combination with sulphur, a mixture which formed a favourite wash to darken the hair. Zinc and bismuth seemed to have equal effects on the skin; 20 grains of **Subnitrate of Bismuth**, 1 drachm of **Glycerine**, and **Rose Water** to 1 ounce, or **Oxide of Zinc** might be substituted for the bismuth. In the internal treatment we are guided by the condition of the patient, and change of diet would in some cases be sufficient to stop the suppuration of the skin. Beer and sweet wines should be avoided, and patients should be kept very persistently on a purgative regimen. **Magnesia** and similar purgative salines were recommended in the form of Friedrichshall water as being very good for clearing the face. **Sulphur** internally was very beneficial and had a remarkable effect in acne indurata. In very anæmic people, **Iron** combined with some laxative should be given. A mixture composed of 2 grains of **Sulphate of Iron**, 5 minims of dilute **Sulphuric Acid**, and 20 grains each of **Magnesium Sulphate** and **Soda Sulphate**, in 1 ounce of **Peppermint Water**, was exceedingly useful for these patients. **Arsenic** also benefited them and stimulated the skin. Some cases of this disease seemed to be benefited only by a good deal of really hard exercise. Gutta rosea or acne rosacea and its hypertrophic form were briefly alluded to. The outward manifestations of this form might be cured if they could not cure the original conditions. It occurred mostly in youth or middle life, and was related to derangement of some abdominal organ like the stomach or the uterine organs. A reflex hyperæmia was produced by dyspepsia or derangement of other organs, and on the basis of this other inflammations occurred, and were largely kept up by the presence of an irritating substance in the blood. In treating this form, the internal organs should be examined; and if the stomach were deranged,

Bismuth was far more suitable than any other medicine whatever, and 15 to 20 grains of the **Subnitrate** two or three times a day, with **Tragacanth** and **Peppermint Water**, might be given. A little **Carbonate of Soda** might be added, although it causes the mixture to effervesce while it is being mixed. If the menstrual functions were irregular, cure was not obtained until the morbid condition was set right. The external treatment should consist of mild **Bismuth** or **Zinc** lotions, and the pustules might be incised, and a very small quantity of **Carbolic Acid** or **Nitrate of Mercury** applied. After a little while a mild form of **Sulphur** lotion was useful. The skin began to peel, and the disorder was cured. As regards acne rosacea hypertrophica, the treatment was entirely surgical.

Bulkley believes **Resorcin** to have considerable influence on the sebaceous glands, and to be of value in acne. Used as an alcoholic and watery solution of from 2 to 5 per cent., it checks the oily secretion so common on portions of the face. As an addition to lotions containing sulphur, it increases their efficiency. It may prove irritating if used in too strong a proportion, and may cause discoloration of the epidermis which is slow to disappear.

Mr. Knapp, again, is of opinion that the disease is mostly due to sexual hyperæmia, and to reduce this he recommends vigorous exercise, a daily cold bath in the morning, a diet containing but little animal food, and no cooked fats or pastries, and a good deal of wholemeal bread and porridge if there is constipation. **Inhalation of Oxygen** or **Drinking Oxygen-water** is beneficial. **Peroxide of Hydrogen** in doses of 15 minims to a drachm is commended. **Chlorate of Potassium** (5 grains), with **Resin of Guaiacum,** made into a lozenge, renders good service. A small amount of beer or light wines is to be prescribed. Local treatment is of slight benefit. **Sulphur** is most to be relied on.

Dr. Sarah E. Post recommends for use in acne a solution consisting of ½ an ounce of **Boric Acid** in 8 ounces of **Alcohol**, to which perfume may be added if necessary. The directions for treatment are as follows: bathe the face at night in hot water containing a few drops of ammonia; do not use soap. Rinse the face in cold water; dry the face. Then apply the solution, sopping it on with the corner of a handkerchief or a piece of clean soft rag. In the morning do not wash the face, but apply the solution. Carry the solution with you, and apply it several times a day if the skin becomes moist. The writer claims most satisfactory results for this method.

Acne Frontalis.—Pick reports two cases of acne of peculiar nature. The first corresponds to the acne varioliformis of Hebra, and the

second to the acne necrotica of Boeck. It is doubtful whether these two forms of acne frontalis are forms of the same disease or distinct diseases. The characteristics of the acne varioliformis are the following: It affects the forehead, especially along the margin of the hair, but may affect the hairy scalp, in the form of a more or less copious eruption of pin-head to lentil-sized, reddish-brown papules, which bear upon the central points a dry, brown crust. The crust adheres closely, and seems sunk into the papule by which it is surrounded. If the crust is removed, it will reveal a loss of substance, with the edges of the top of the papule overhanging. Some papules have an inflammatory halo. Here and there will be found brownish-red cicatrices. The lesions are not in relation to the hair follicles, nor are comedones found. The lesions bear a striking resemblance to those of variola. The crust adheres for a long time, and when it falls it leaves a cicatrix. Acne necrotica affects the whole face, excepting the forehead, lips, and lids, and occurs in the form of closely-grouped papules of the diameter at the base of four to five millimètres, which are separated from each other by furrows, are glossy, and of pale-red or yellow colour. In the depths of the groups violet points and stripes are seen. After a time the papules bear upon their summits dry, brownish-red crusts, covering a faint loss of substance. By the coalition of many papules, large crusts are formed upon a reddened, infiltrated, and eroded corium. A study of these symptoms indicates that acne varioliformis and acne necrotica run quite different courses.

REFERENCES.—"Therap. Gaz.", May 15, 1890; "La France Méd.," March 14, 1890; "The Pract.," March, 1890; "Jour. Amer. Med. Assoc.," Sept. 7, 1889; "Prov. Med. Jour.", Dec. 2, 1889; "Med. News." (Philadelphia), Jan. 18, 1890; "Archiv. f. Derm. und Syph.," 1889, xxi. 551, "New York Med. Jour.", June 28, 1890; "Lancet," Feb. 15, 1890, p. 338.

Synopsis.—(Vol. 1890, p. 111.) *Acne Vulgaris.*—Tepid or cold sponge baths, followed by friction with a rough towel, and exercise, avoiding undue fatigue, should be taken. The indolent variety requires thorough cleansing of the skin with soap and warm water, and promotion of excretion from the plugged gland ducts by pressure and local massage, aided by hot steaming and douching. Comedones may be expressed by a watch key. Diet must be nutritious, with free allowance of fats, and the bowels must be kept regular. **Sulphate of Magnesia or Soda**, or both, with **Sulphate of Iron** and **Sulphuric Acid** as aperient, if necessary. *Locally:* **Sulphur** in powder, lotion, or ointment, preferably the two latter, and **Naphthol** may be combined: ℞ Naphthol, 10%, Sulph. Præcip. 50%, Green Soap, 20%, Vaseline, 20%; to be spread on the face and left on from half an hour to an hour, repeating this till the skin peels off. In obstinate cases: ℞ Powd. Chalk, 5%; β Naphthol, 10%; Camphor, 10%; Vaseline, 10%; Green Soap, 15%; Præcip. Sulph, 50%, M. **Resorcin, 20%** strength, as in Lassar's paste, is excellent. To abort small

acne papules, touch them with pure liquid **Carbolic Acid,** and immediately paint on flexible **Collodion.** Large or indolent papules must be incised, and Kaposi's acne lancet is best for this; scraping the surface freely with the dermal curette as a preliminary, then douching with hot water before applying lotion or ointment. In the irritable variety, avoid strong soaps and undue friction, and use soothing applications.

Acne Rosacea.—**Calamine Lotion,** with a drachm **Precipitated Sulphur** to each 4 ounces, is useful as a paint at night, after bathing with very hot water and carefully drying; in the morning, wash with tepid water (no soap) and dust with **French Chalk,** containing Salicylic Acid 2%; or **Vlemingkx's Solution,** ½ or ¼ usual strength, may be substituted for the Calamine and Sulphur lotion. Attend to menstruation and digestion; hot vaginal douche benefits some; **Ergot** in menorrhagic cases; **Permanganate of Potass** in amenorrhœa: Ext. Salicis Nigræ, 5ss doses, is often useful.

Acne Variolifórmis.—Scrape and apply **Black Wash,** and an ointment of **Carbonate of Zinc** with a little **Salicylic Acid.** Internally, a mixture of **Acetate of Potass, Nux Vomica** and **Rumex.** R Resorcin, 2 parts; Boric Acid, 2 parts; Vaseline, 20 parts.

ADENOID VEGETATIONS. (See "Naso-Pharynx.")

AIR (Compressed and Rarefied). *F. de Havilland Hall, M.D.*

What advantages are to be expected from exhaling into rarefied air after inhaling compressed air? Dr. S. Solis-Cohen answers as follows: "An improved respiratory habit—that is to say, a fuller, freer, and more regular habitual respiration—is brought about, and the gain in vital capacity is very great. Not only is the exhalation of carbonic acid favoured, but the subsequent absorption of oxygen is augmented on account of the greater extent to which emptying of the lungs has been secured. The alternating effects upon the alveoli increase the elasticity of the lung tissue. The alternate filling and emptying of the vessels stimulates circulation, increasing both rapidity and volume.

"I am aware that doubts have been cast on the possibility of increasing the absorption of oxygen. Be this as it may, the effect clinically is to vastly stimulate and increase the nutrition of the patient. By careful observation I have been led to attribute this increase of nutrition to the ease with which the patient is able to dispose of the greater amount of nutriment which we administer. A patient over-fed but not taking inhalations of compressed air, will not increase so rapidly in weight as one who is over-fed and at the same time taking these inhalations. A patient taking inhalations of compressed air and not over-fed will not increase in weight. I have thought that the great gain was due to the stimulation afforded to the secondary assimilation and to the general metabolism. Tissue respiration and the activity of the chylopoietic processes are increased by the increased activity of circulation, the heightened blood pressure, the augmented pulmonary gaseous ex-

change, and also by the pressure transmitted from the diaphragm upon the abdominal organs. Patients with pulmonary troubles who are taking iron will take larger quantities and bear it better. This is also the case in anæmia and chlorosis. One of the earliest manifestations of improvement is promotion of sleep, due partly to relief of cough and improvement of respiration; partly, perhaps, to improvement of metabolic processes and consequent elaboration of physiological hypnotics."

The increased work of the chest muscles is also beneficial, and is an aid in the augmentation of the vital capacity. Under this plan of treatment the chest has been found to increase from half an inch to an inch and a half in expansion. This increased respiratory activity is especially useful in cases where the chest expansion has been impaired through phthisis, chronic pneumonia, or pleurisy, and is comparable to the results obtained by the high altitude treatment of pulmonary complaints.

Dr. Solis-Cohen has designed a very ingenious instrument, somewhat resembling Waldenburg's apparatus, for the carrying out of this plan of treatment.

REFERENCE.—"New York Med. Jour.," Nov. 23, 1889.

AIR EMBOLI. *Frank W. Jackson, M.D., New York.*

Dr. H. A. Hare has written an important paper upon *The Effect of the Entrance of Air into the Circulation.* In this subject he shows by experimental research that there is not as much danger from the entrance of air into the circulation as is commonly supposed, and that the air on entering a vein is not capable of exerting deleterious influences. This is in direct contradiction to the teachings of all text books that the entrance of air into a vein is one of the most serious complications which may occur during an operation, and that in a vast majority of cases such an accident is followed by death. He experimented upon a large number of dogs, and in all the results were identical in proving that the entrance of air into a vein—at least of one of the lower animals—is not dangerous. The quantity of air injected into the jugular vein varied from a minute bubble to forty cubic centimetres, and the rapidity of injection was almost instantaneous. No change was in any way noticed in the dog, save that the breathing may have been quickened for about one minute after the injection, and the animal thereafter remained in perfect health.

The effects of the entrance of air into the carotid artery he finds to be different, but nevertheless they totally disprove the theory that it is by cardiac failure that death under such circumstances occurs. When air in as large an amount as twenty cubic centimetres is injected into

the carotid artery in from one half to one second, respiration ceases at once, unconsciousness asserts itself, and the animal is apparently dead, save for the action of the heart, which keeps on as if nothing had occurred. In a moment respirations are renewed, the breathing becomes at first more powerful, then less and less so till death really ensues, a result which can be indefinitely postponed provided artificial respiration is kept up. Sometimes the animal begins to breath voluntarily, and lives independently of any such aid, in others he dies at once when artificial respiration ceases.

Hare then analyzes the various articles that have appeared upon this subject, and shows that though some experimenters have claimed to have produced death by the introduction of a small amount of air into the jugulars of some of the larger animals (as the ox), yet the greater number of careful writers upon this subject have denied this, and have found that only very large amounts of air would cause death. Thus, the experiments of Aysten proved that only quantities varying from forty to one hundred and twenty cubic centimètres, according to the size of the dog, proved fatal, and that larger amounts must be used to kill the ox or horse.

Magendie threw forty or fifty pints of air into the veins of a very old horse without his dying immediately ; and Cormack blew the contents of his chest twice filled into the jugular vein of a horse before the animal exhibited any signs of uneasiness. The conclusion to be reached, therefore, from all experimental researches is that enormous amounts of air must enter a vein to cause death, and that no such quantity can possibly find its way into a vein which has been injured by the knife of the surgeon.

As to the facts in favour of the prevailing idea, Hare claims that there are none. While we have a large number of cases reported of sudden death under operations where veins were opened, in the majority of them the cause has been guessed at, and not proved. The only case which approaches in any way towards authenticity is that of Mott, who saw a serious but not fatal result induced by the entrance of air into the facial vein, and even this is not a proved case. In regard to the entrance of air through the uterine sinuses and thus causing death, Hare does not attempt to either affirm or deny that this may occur ; but he points out that the character of the accidents and the peculiar anatomical arrangement of these veins render the entrance of large amounts of air more easy of accomplishment.

REFERENCE.—"Therap. Gaz.," Sept. 15, 1889.

Synopsis.—(Vol. 1889, p. 146.) **Nitrite of Amyl** inhaled.

ALCOHOLISM. *Graeme M. Hammond, M.D.*

Dr. E. Monin in his volume published by Octave Doin, recommends the following treatment as the most efficacious. In acute alcoholism he prescribes **Rest in Bed, Emetics, Tea, Coffee,** and **Acetate of Ammonium.** Enemata of coffee combined with friction and massage frequently avert collapse. In some cases he uses the stomach pump or Faucher's tube. Capsicum and cherry laurel are useful in cases of coma. For the insomnia, cramps and nightmare of acute "absinthism," large doses of **Chloral** and of **Opium** are recommended. Delirium tremens is treated by **Saline Purgatives, Warm Baths,** and **Laudanum,** together with **Beef Tea** and **Milk.** In chronic alcoholism, Dr. Monin recommends **Milk Diet, Open Air Exercise,** and **Quinine** and **Tonics.** Great stress is laid upon the value of **Strychnine** in heroic doses.

Dr. T. S. Clouston lays down the following principles for the treatment of dipsomania: (1,) Legal control, which to be efficacious must be secured early in the course of the disease; (2,) Total abstinence; (3,) Physical and mental exercise; (4.) To educate the minds of children to appreciate the power of self-control so that they may have strength to overcome cravings before they become morbid.

REFERENCES.—"Lancet," March 29, 1890; "Practitioner," April, 1890.

Synopsis.—(Vol. 1889, p. 13.) In chronic cases, **Amylene Hydrate** iijss grammes as hypnotic, especially if cramp cause insomnia.

ALOPECIA AREATA. *W. Allan Jamieson, M.D.*

Dr. Dubreuilh, in the "Journal de Méd. de Bordeaux," August 18, 1889, speaking of treatment in *pelade*, first calls attention to the prophylactic measure laid down by Besnier in his recent report to the Academy of Medicine, in which he strongly recommends that all subjects of the disease be excluded from schools and public institutions so far as practicable.

The curative treatment is uncertain in its results. Some cases recover spontaneously in two months, while there are others that, despite the most vigorous treatment, last for months or over a year. The duration of a treated case is less than that of one left to itself. The methods of treatment are divided into two groups, according as the alopecia is of nervous or parasitic origin, and each method has been extolled to the exclusion of others, and for all the cases by the adherents of one or the other theory. Exciting frictions of all natures are recommended by the contagionists, as by those who only admit of a nervous origin.

Horand advises the application upon the bald spots of pieces of

Tinder soaked in **Croton Oil** left on long enough to produce vesication. If too much inflammatory reaction is brought about, the hair follicles may be destroyed and the baldness become permanent. Besnier says he has found no good results from any form of electricity. Schütz, on the other hand, has recently reported the greatest benefit in trophoneurotic alopecia by passing a current of four milliampères through each spot for five minutes at a time. Besnier thinks epilation of the borders useful. As long as any trace of the affection remains recurrence of the bald patches is to be expected.

Speaking of the permanency of cures in alopecia areata, Mr. Jonathan Hutchinson remarks: "We often encounter so much discouragement in the treatment of alopecia areata that it may be worth while to mention some facts illustrating its complete and permanent cure. My own experience has been that in some of the best cases of apparent cure a relapse has, after a year or two, taken place. In more than one case in which a patient who had been almost wholly bald grew an excellent head of hair, I have seen the whole of it again fall off a year or two later. It may be that I somewhat underrate the average success of treatment, since most of our patients are lost sight of as soon as the cure is well advanced. It is only by accident that we are made acquainted with the results after long intervals. The cases which have induced me to make these remarks are the following, which came under my notice within a few days of each other. In the first, a gentleman of about fifty, who was under my care for eczema, told me that when about twenty he had been for a year or two troubled with large bald patches on his head. For these he was for long under the treatment of the late Mr. Startin, who blistered him repeatedly. After much disappointment the hair grew again perfectly, and during the thirty years which have elapsed there had been no relapse. In the second case, a lady of thirty-five, who had a single bald patch of only two months' duration, on the top of her head, told me that a brother, who was a year younger than herself, had, at the age of fourteen, suffered from many such patches on his head. Her mother, who was with her, confirmed this statement, and said that the patches were smooth and glossy, and that there was never any suggestion of ringworm. The boy's case took several years of treatment, but the cure was at length complete, and there had been no tendency to relapse since."

Lassar adheres to the opinion formerly expressed, that alopecia prematura and areata are both communicable diseases, and are best cured by parasiticide remedies. Indeed, he holds that premature baldness is a misnomer. No hairs should fall from a well-kept and healthy

scalp. There is nothing in human beings corresponding to moulting in animals. That which resembles it is nothing else than the regeneration of hairs lost pathologically. In treatment he advises that the scalp should be washed by an experienced hand for ten minutes daily for six to eight weeks, afterwards less frequently. In doing this, a strong tar soap, such as Berger's tar soap, is the best to use. The scalp is to be well soaped, the hair for this purpose being divided into as many locks as possible, and then the soap washed quite away by means of an irrigator or small watering can, first with warm, afterwards with cold water. The cold douche prevents chill. After gentle drying, the head is now rubbed with:—

℞ Sol. Hyd. Perch.	0·5 : 150·0	Sp. Cologniensis	āā 50
Glycerini		M.	

Then rubbed dry with absolute alcohol with ½ per cent. of naphthol, and finally, pretty freely with:—

℞ Acid. Salicylic.	2·0	Ol. Pedum Tauri	100·0.
Tinct. Benzoin	3·0		

If this procedure is persisted in from day to day a satisfactory result will be attained in the large majority of cases.

REFERENCES.—"Jour. of Cutan. and Genito-Urin. Dis.," Oct., 1889; "Arch. of Surg.," Oct., 1889.

Synopsis.—(Vol. 1889, p. 149.) **Ung. Sulphuris; Pilocarpine** ($\frac{1}{60}$ gr. of hydrochlorate, or $\frac{1}{10}$ gr. of nitrate), hypodermically. **Ung. Chrysarobini** (℥j to ℥j of lard, or ℥ss to ℥j of **Lanoline** and **Oil**) well rubbed in night and morning. ℞ Ol. Pini Sylvestris, ℥j; Hyd. Perchlor, gr. ij, dissolved in Spirit, adding ℥ss Ext. Capsici, if Turpentine alone is not strong enough. ℞ Ol. Sinapis, ℥j; Ol. Ricini, ℥ij; Sp. Rosmarini, ℥iv. M. Paint on with a brush once or twice daily. Blistering is useful, also repeated shaving round the patches. ℞ Sp. Vin. Rect. ℥j; Tinct. Cantharidis; Tinct. Capsici āā ℥ij; Sp. Rosmarini. ℥j; Ammon. Fort, ℥ij. M.

(Vol. 1890, p. 120.) Cut the hair short, apply a mild sinapism or rubefacient to scalp, and rub in the following every five days cautiously: ℞ Acid. Acet., Chloroformi āā q.s. M. Also wash the scalp every morning and apply ℞ Acid. Salicyl. gr. xv, Sulph. Præcip. ℥ijss, Vaselini ℥v. Avoid fatty applications.

(Vol. 1890, p. 121). **Local Stimulation** is best.

Lassar's treatment: For six or eight weeks, lather the scalp with strong tar soap for ten minutes daily, removing this with an irrigator, using first, lukewarm, and then cold water. Dry the scalp thoroughly, and apply ℞ Sol. Bichloride of Mercury, 8 grs. to 5 ozs.; Glycerine, ℥ij ℥v; Cologne Water, ℥ij ℥v, M. Then rub the scalp dry with **Alcohol** 90%, to which **Naphthol** ½% is added. The scalp now being free from any fat, apply ℞ Salicylic Acid, 30 grs.; Tincture of Benzoin, 45 grs.; Neat's Foot Oil, ℥iij to ℥ij. In very obstinate cases try ℞ Carbolic Acid, 15 grs.; Sublimed Sulphur, 75 grs.; fat from a horse's neck, ℥iss, M. ℞ Pilocarpin. Mur. 30 grs.; Vaseline, ℥v; Lanolin, ℥ijss; Oil of Lavender, 25 drops; M. ℞ Pilocarpin. Mur. 30 grs.; Quinine Mur. 60 grs.; Præcip. Sulphur, ℥ijss; Balsam of Peru, ℥v; Ox Marrow, ℥iij; M. Wash and dry the scalp before applying, and remove the

ointment soon with soap, and reapply it. **Tar Baths** are also useful. Increase fats and phosphates in diet by fresh butter, cream, etc., with milk between meals. Free and persevering use of **Strychnine**, with **Phosphoric Acid** internally. As parasiticides: **Bichloride of Mercury** strong enough to moderately stimulate skin, or **Ung. Veratriæ**, grs. v to x to ʒj. Stimulating applications, as **Croton Oil**, strong **Carbolic Acid Lotions**, **Acetum Cantharidis**, **Capsicum**, etc., are useful.

AMBLYOPIA (Tobacco and Alcoholic). *W. Lang, F.R.C.S.*

The line of treatment indicated in this affection is to cut off the use of both these intoxicants, where even only one is the suspected cause of the amblyopia; then to raise the vascular tone of the optic nerve. This may be done immediately by administering **Nitrite of Amyl**, which flushes the nerve and improves the vision within a few moments, or by injecting subcutaneously large doses either of **Strychnine** or **Pilocarpine**, which also act quickly, within a few minutes, and thus indicate the possibility of recovery. Daily injections of smaller doses of either of these drugs, or their administration internally with **Iodide of Potassium** will complete the cure in those cases where an initial improvement was obtained. Cases of long standing are not so hopeful.

AMENORRHŒA.

Synopsis.—(Vol. 1889, p. 149.) **Santonin**, grs. ij. before meals, in cases characterized by anæmia, chlorosis, and general depression; **Cimicifuga**, Tinct. ♏v to x, when molimina occur but catamenia are absent; **Sanguinaria**, *e.g.*, ℞ Tinct. Sanguin. Tinct. Nux Vom. āā ʒij., Tinct. Aloes ʒss. Sig. gtt. xx bis in die; **Megarthes Infus.** ʒij. to vj., hot every morning: **Apiol**, ♏j to ij, night or morning, in suppression, in primary amenorrhœa, or when discharge is scanty.

(Vol. 1889.) **Aletris Farinosa** Tinct. ♏v to x (p. 150); **Cypripedium**, Tinct. ♏v to xv, or **Cypripedin**, grs. j to ij, if nervous debility and despondency exist (p. 46, 1888); **Guaiacum**, resin powdered, grs. x in milk every morning to promote flow (p. 55, 1888).

(Vol. 1890, p. 122.) **Iron, Permanganate of Potash**, gr. j to ij t.d.s. or **Peroxide of Manganese**, gr. ij t.d.s., and **Iodide of Potassium**, in increasing doses, gr. v to x are best. Abdominal **Massage** and **Faradism** are useful adjuncts. **Tinct. Pulsatillæ**, ♏iv t.d.s. in primary amenorrhœa. **Tinct. Aconite**, ♏j hourly, in acute arrest with pyrexia. **Iodide of Potassium** and **Salines** in chronic arrest with severe frontal congestive headache. **Ol. Morrh.** and **Parrish's Food** in strumuous subjects. **Change of Air** and mental rest when due to mental overstrain. **Tinct. Caulophylli**, ♏v to xx, alone or with **Pulsatilla**. In obstinate cases, a spiral wire stem **Pessary**.

ANÆMIA AND CHLOROSIS. *Frank J. Wethered, M.D.*

Some years ago, Teission suggested as a remedy for chlorosis, when all others had failed, the injection per rectum of defibrinated blood. This treatment has been revived by Antig who speaks well of it. The material employed is the blood of oxen, duly defibrinated. About 5 oz. of this is injected *per rectum* twice a day for a week. The

treatment is discontinued at the end of that period for a week, and then recommenced. Care should be taken to warm the blood over a water-bath before injecting, and the patient should be directed to retain it as long as possible, any colicky symptoms being overcome by the addition of a few drops of laudanum. According to the author, this treatment is more rapidly and certainly successful than any other at present resorted to. The proportion of red corpuscles in the blood promptly increases, and the mucous surfaces regain their normal colour. He attributes the rapid improvement that takes place to the fact that the employment of defibrinated blood fulfils three indications: (1,) Restitution of the iron; (2,) Restitution of oxygen; and (3,) Restitution of the salts of potash and the chlorides. Dr. Huchard, commenting thereupon, mentions that, in a case of his own, he had succeeded in overcoming an anæmia which had resisted all medication.

Pernicious Anæmia.—Some important communications have added to our knowledge of this disease during the past year.

Dr. F. W. Mott publishes the results of a careful chemical and microscopical examination of the various organs from a fatal case. He found large proportions of iron in the ferric state in the liver, and, practically speaking, nowhere else. In the kidney a faint blue line (after the tests for iron had been applied) was observed in the cortical zone, and another but fainter coloration being noticed in the lower part of the boundary zone. He believes that if the following conditions coexist the diagnosis of pernicious anæmia can be made with certainty: (1,) General weakness and debility from no ascertainable cause, coming on usually in middle life; (2,) Symptoms and physical signs of cardiac dilatation, with no history or symptoms of valvular disease; (3,) The presence of retinal hæmorrhage, this condition having been present in five fatal cases that came under his observation; (4,) Great diminution of red blood corpuscles (one-half to one-eighth of normal) with a corresponding proportional diminution of colouring matter; (5,) Occasional pyrexia; (6,) A peculiar, sallow lemon-colour of the skin very like a cancerous cachexia, but not attended with the same degree of wasting, fat still occurring in considerable quantities in the abdomen; (7,) The evidence of hæmolysis, in the discharge of excess of colouring matter by the urine and fæces; the stools are normal as regards colour, and the urine, although usually of normal or even comparatively low specific gravity, is high coloured.

Dr. Hunter, whose researches in pernicious anæmia are well known, has made some valuable researches on the urine in this

disease. After giving an exhaustive account of the methods employed, and details of the results obtained, he states that he has arrived at the following conclusions: There are three changes made out sufficiently well to merit some degree of attention:—

(1,) *The presence of pathological urobilin* in great quantity—a colouring matter derived in all probability partly from the bile-pigments in the intestinal tract, partly from other products of hæmoglobin destruction, found so abundantly in the liver, spleen, and kidneys in this particular case.

(2,) *The presence of blood-pigment*, recognisable on microscopic examination, of whose source there could be no doubt, as it appeared in the urine in the form of granules, similar in appearance and in character to those afterwards found in the cells of certain of the renal tubules.

(3,) *An increased excretion of iron.*

All these changes point to the existence of one condition of the blood, namely, an excessive destruction; and they all agree in one respect, namely, that they varied in degree from time to time, the aggravations from weakness from which the patient periodically suffered being marked by higher colour of the urine, excretion of blood-pigment, and increased excretion of iron.

In addition to this, their pathological significance, these changes are, Dr. Hunter is inclined to think, of no little importance from a diagnostic point of view. The high colour of the urine observed, unaccompanied as it was by any diminution in quantity or any rise in specific gravity, and the presence of granules of blood-pigment in the urine, pointed so unmistakably to the nature of the pathological process at work in the blood, that they established conclusively the diagnosis of the case as one of pernicious anæmia.

In a further communication, Dr. Hunter records another interesting case in which he made elaborate researches as regards the excretion of aromatic sulphates and ptomaines by the urine. He found two of the latter bodies (cadaverine and putrescine), and also another substance of uncertain composition. As to the significance to be attached to the presence of these ptomaines, Dr. Hunter speaks with reserve, although he considers that the exacerbations from which the patient suffered from time to time presented all the phenomena of toxic poisoning.

In referring to the treatment of pernicious anæmia, Dr. Hunter thinks that there are two chief considerations: (1,) To remove the cause, with the attendant gastro-intestinal conditions favouring its operation; and (2,) To combat the symptoms. For the first he advises **Arsenic** and

Beta-Naphthol; this drug possesses great disinfecting power, with at the same time, great insolubility in water.

The most important of the symptoms is the excessive destruction of blood induced by the absorption of the poisons. The best way of combating this is by the regulation of the diet, and the best results may be expected from a more exclusively farinacious diet.

REFERENCES.—"London Med. Rec.," Dec. 20, 1889; "Lancet," Feb. 1890; "Practitioner," Dec. 1889; "Brit. Med. Jour.," July 5, and 12, 1890.

Synopsis.—(Vol. 1890, p. 123.) (1,) **Aperients** for constipation; (2,) **Iron**, *e.g.*, Blaud's Pills. ℞ Ferr. Sulph. gr. ijss; Pot. Carb. gr. ijss; Sacchari, gr. j; Tragacanth, gr. ½; Ft. Pil. j. Sig. ij ter. in die post cib.; (3,) **Regulate Dress**, avoiding all constriction; (4.) Regular out-of-door **Exercise. Enemata** and **Abdominal Massage** for fæcal accumulation. **Iodide of Potash** and **Purgative Salts** (Mist. Alba) in lead poisoning. **Mercury** in small doses in syphilis. **Filix Mas** or **Kamala** for tæniæ. **Arsenic** in increasing doses, *e. g.*, Liq. Arsen. ♏iij to xv, in pernicious anæmia. **Arsenic** is also useful where iron fails, if there is no gastric irritation.

ANEURYSM (Thoracic). *Frank W. Jackson, M.D., New York.*

Dr. R. Douglas Powell has written an able article upon the diagnosis and treatment of this disease in which he sums up very clearly the symptoms generally accepted as diagnostic and also emphasizes the important fact that although the anatomical description of aneurysm still includes the fusiform and sacculated varieties, yet, clinically, all the features of aneurysm are grouped about the sacculated form, and in regard to clinical signs and treatment, the fusiform variety merges into the form of heart disease with which it is associated; therefore, to treat it seriously as an aneurysm is but to damage the prospects of the patient. In this respect the diagnosis between the two varieties becomes important.

In the fusiform variety the signs are, with rare exceptions, manifested about the commencement of the vessel. No pressure signs are observed, and death occurs, not by rupture or compression of vital parts, but from cardiac failure, angina, or syncope. The treatment therefore is that appropriate to the heart condition. (It might also have been added that the symptoms of this condition are chiefly those of aortic valvular disease of the heart with consequent hypertrophy and dilatation of the left ventricle and over-action of the heart muscle, and it is from this change in the action of the heart that the patient suffers most).

The essential phenomena of the true or sacculated aneurysm are: (1,) Those of pressure tumour signs; (2,) Those indicative that the tumour is a vessel tumour, a diverticulum from the vessel. To attach

primary importance to the signs of arterial disease or disturbance without sufficient enquiry for those of tumour is to invite error in diagnosis. In illustration of such errors he refers to cases of vaso-motor paresis of the aorta causing pulsation thrill and the murmurs of aortic regurgitant disease with locomotory impulse of the uncovered aorta from retracted fibroid lung, giving pulsation and murmurs resembling aneurysm. Still more common are cases of pulsation of the abdominal aorta, often most difficult to recognize from aneurysm. In all these cases, however, although the signs of vessel disorder or disease are abundant, those of tumour causing local pressure are, on sufficiently careful examination, found to be absent, and in their absence the diagnosis of aneurysm cannot be substantiated. A systolic murmur heard over a localized area remote from the heart is of value in diagnosis, but in about half the cases of aneurysm which present themselves no murmur is present, and in a portion of the remainder the murmur heard was by no means the most important sign present. A diastolic murmur is of great diagnostic value for it furnishes distinct evidence of intra-arterial disease, and if therefore associated with the pressure signs of tumour, the aneurysmal nature of that tumour is almost demonstrated. Thrill is a comparatively rare sign in true aneurysm, a common one in spurious aneurysm and in simple dilatation of the vessel. Dr. Powell groups the pressure signs of aneurysm as affecting the parietes, the viscera, the nerves—sympathetic and pneumogastric —the air tubes, the œsophagus and the vessels. These are all common to aneurysmal and other tumours, aneurysmal pressure symptoms, however, exhibiting more inconstancy than those of solid growths. The history and the build of the patient and the superadded signs symptomatic of vessel disease complete the diagnosis. Among these signs he especially values a *systolic jog*, often appreciable to the ear through the medium of a rigid stethoscope, and, of greater importance, the *diastolic shock sound* in many cases can be similarly appreciated. This, like the preceding, requires the rigid stethoscope to be well made out, and certain conditions are necessary for the presence of the second shock sound : first, the aneurysm must be situated about the arch of the aorta ; secondly, the aneurysm must be sacculated ; and, thirdly, there must be no serious aortic incompetence. Dr. Powell has often found this sound present in the absence of other signs, and he considers it when well marked as absolutely diagnostic of aneurysm, differentiating in many cases most usefully from other tumours. He regards the laryngoscope as of both actual and supplementary service in diagnosis, but (we are glad to see), considers the sphygmograph as of but little use except as a recording instrument.

In regard to treatment, Dr. Powell considers Tufnell's method as most valuable when it can be well carried out. This is especially the case in abdominal aneurysms and of sacs pressing deeply upon vital parts; also in congested aneurysm, where venesection might sometimes be employed first with advantage. Tufnell's method, first, diminishes the cardiac beats, and, therefore, the aneurysmal distensions, by many thousands daily; secondly, it reduces blood volume, and is said to inspissate and render more fibrinous the blood; thirdly, it reduces the blood pressure, slows the current through the aneurysm, and so favours conditions for clotting from the periphery. He regards this clotting as not wholly a mechanical process, but believes that in the stagnating current the white corpuscles make for the periphery, and, perhaps, carry with them that coagulating principle, lecithin, which the late Dr. Wooldridge has described as especially associated with them. Dr. Powell condemns the wire and galvano-puncture treatment as causing clotting of the wrong sort and in the wrong place, that is, in the centre rather than from the circumference of the aneurysm. He thinks possibly in external sacs, Wooldridge's **Extract of Lecithin** might be injected, with great caution however.

Dr. Broadbent, in discussing the above article, notes the fact that aneurysms of the ascending aorta may attain considerable size and yet produce very little pressure upon neighbouring parts, owing to its natural mobility. So much is this the case that this form might be called the aneurysm of physical signs, while aneurysm of the arch proper, or of the descending part might be called, rather, the aneurysm of symptoms. We are glad to note that he regards a murmur as rather the exception than the rule, as this coincides with our experience. In regard to treatment, Dr. Broadbent does not believe that the fusiform aneurysm is amenable to any form of treatment. The only thing to be done is to lower the general intra-arterial pressure, enjoining **Rest**, if otherwise necessary, but not with the idea of promoting a cure. In sacculated aneurysms he had nothing to add to what had been said in regard to the Tufnell treatment, but his own experience with **Potassium Iodide** was that it produced striking effects in promoting consolidation within the sac. His explanation of the action of the iodide is that it virtually effects the same thing as the Tufnell treatment, draining off the fluid by the kidneys and so inspissating the blood.

Dr. Sibson's plan of treatment by **Ergot** unquestionably diminishes the size of the tumour, though it does not do so by its specific action on the muscular fibre in the sac wall, since Dr. Broadbent has never

been able to discover any there, though he had carefully examined the sac wall in a number of cases.

REFERENCE.—"Brit. Med. Jour.," Dec. 14, 1889.

Synopsis.—(Vol. 1889, p. 154.) Antipyrin and Phenacetin for relieving pain (Beaumetz).

ANGINA PECTORIS (and Pseudo-Angina).

Frank W. Jackson, M.D., New York.

Dreschfeld discusses this subject with great care and at some length, and an abstract of his paper is here given.

The symptoms of true angina pectoris consist of paroxysms of pain in the præcordial region, radiating in other directions, especially toward the left shoulder and along the course of the left ulnar nerve, with the feeling of great anxiety, of oppression, with more or less dyspnœa, and with pallor of the face and variations in the pulse. These symptoms vary in intensity and are not always present. Besides the abortive attacks where the symptoms are slight, we may, according to the greater preponderance of one or other of them, distinguish several types: (1,) *The respiratory type;* (2,) *The neuralgic type;* (3,) *The vaso-motor type.*

First, as to the *respiratory type.*—In most cases this is not the dyspnœa which we notice in asthmatic attacks; the patient suffers from great oppression in the thorax, the respirations are superficial and irregular, and there is a feeling of suffocation. He is unable to move; he stands fixed, and looks for some support. In some few cases, however, there is marked dyspnœa, the breathing is laboured, the respirations are deep, and the patient, instead of remaining fixed to the spot, rushes to the open window, or into the fresh air. Such cases are rare, but they are of true anginal nature, and may terminate fatally.

Second, the neuralgic type.—The principle symptom is pain. This is situated usually beneath the sternum or pericardium, radiating to the left shoulder, and thence along the inner side of the arm to the elbow, or to the fourth and fifth fingers of the hand. Or, the pain may radiate to the right shoulder and right ulnar nerve, or to the back, abdomen, or lower extremities. The abdominal pain may be situated in the epigastrium, or in the ovaries, or in the testicles. When the pains are associated with the after symptoms of angina the diagnosis is easy, but sometimes the neuralgic pains may form the chief symptom.

Third, the vaso-motor type.—This was long since described as a special form by Nothnagel. It is chiefly characterized by vaso-motor symptoms, in some cases following, in others co-existing with, the præcordial pain. There is marked pallor, a quick pulse, regular or inter-

mittent. The arterial tension is sometimes increased, at other times diminished. Vertigo, paræsthesia or anæsthesia of the left arm, or of both arms, are often associated with these vaso-motor symptoms, and flatulence and vomiting occasionally occur towards the close of the attack. The vaso-motor type is especially seen in pseudo-angina; in true angina the vaso-motor symptoms are often preceded by præcordial pain and præcordial oppression.

The lesion most commonly found in persons who have died from true angina is some affection of the coronary artery obstructing the lumen of that vessel. Atheroma of the coronary artery is the lesion most common; occasionally thrombosis, embolism, or, especially in younger persons, syphylitic disease of these arteries is seen. Diseases of the aortic valve are often associated with angina, as in such cases the coronary arteries are easily compressed, and their lumen is narrowed. In some cases the nutrition of the heart may be interfered with, even with a healthy condition of the coronary arteries, as in cases of excessive dilatation of the heart, chronic pericarditis, and chronic myocarditis, etc. The author refers especially to one point not sufficiently noticed, that is, that the coronary arteries are often already markedly atheromatous when the other arteries show as yet no change. This is no doubt due to the fact that the blood enters the coronary arteries under very great pressure, and this easily leads to weakening of the middle coat and subsequent atheromatous changes in the intima of the artery. This explains the occasional appearance of angina in young persons where there are as yet no symptoms of general arterial degeneration. Dreschfeld instances the heart of a boy of twelve in which the aorta shows only slight atheroma, while the coronary arteries are markedly affected with atheroma. He states also that atheroma occurs much more frequently than is generally stated. In addition to the more common conditions and diseases which give rise to it may be mentioned conditions associated with increased arterial resistance, as in persons accustomed to great muscular exertion, to those who live too liberally, in acute and chronic infectious diseases, and in many nervous affections due to excessive mental work or strain, etc. Heredity is also an important factor in the etiology of atheroma, and the author believes that congenital syphilis attacks the aorta and coronary arteries more commonly than is generally supposed, causing obliterating endarteritis.

The majority of cases of angina pectoris have thus one lesion in common, and that is obstruction of the coronary arteries. A few cases of true angina followed by death, however, have been observed, where careful examination of the coronary arteries throughout their course

have shown arterio-sclerosis in some small isolated patch only, and finally, the author has observed two typical cases of angina in which the most careful post-mortem examination showed no trace of any disease.

Death may occur first from the unrestrained action of the sympathetic, the pulse gradually gets weaker and quicker, the heart sounds are scarcely audible, and the heart's action ceases ; secondly, death may be due to tonic contraction of the heart. Thirdly, some believe that death may take place from an affection of the centre which presides over the automatic action of the heart, and which resides in the cardiac ganglia.

Pseudo-anginal attacks occur in various affections. The most common are hysteria, neurasthenia, gout, chronic nicotinism, affections of the stomach and intestines. In true angina the disease is due to some abnormal condition of the cardiac nerves, or, in other words, the cause is a peripheral one. In pseudo-angina the cause will be found to be a central irritation or a reflex irritation. The affections in which pseudo-angina occur may, therefore, be classified under two groups.

One group consists of those in which there is central irritation, and here the irritation may attack the centres directly or indirectly, the causal agent being of a toxic nature, and circulating in the blood. To the first sub-group belong hysteria, neurasthenia, and other affections of the nervous system, such as locomotor ataxy ; the second, or toxic, sub-group includes gout, chronic nicotinism, chronic alcoholism, excessive use of tea, etc.

The *second group* comprises those conditions in which the irritation affects the cardiac nerves reflexly, such as gastric catarrh, nervous dyspepsia, gall stones, etc. The irritation starts here from the terminal sensory nerves in the different organs, and is reflected to the ganglionic apparatus of the heart. According to some the pseudo-anginal attacks in affections of the stomach and intestines are due to the formation of ptomaines, which are absorbed into the blood, and may thus act either on the centre or on the peripheral terminations of the cardiac nerves.

It is important to differentiate the pseudo-anginal attacks occurring in some of these affections from true angina pectoris.

Anginal attacks occur occasionally in persons suffering from *hysteria.* Huchard gives the following diagnostic points : (1,) Persons suffering from hysterical angina are young, as a rule ; (2,) The attacks occur not after violent exertion, but often without palpable cause, and occur at regular periodic intervals ; (3.) The radiation of the pain is along the sternum and along the insection of the diaphragm at the back.

There is often marked hyperæsthesia of the skin over the left mamma and occasionally we have a distinct hysterogenous zone there; (4,) There is almost always marked dyspnœa; (5,) The patient shows great excitement and there is not the anxious expression of countenance; (6,) The co-existence of other hysterical symptoms; (7,) The absence of any sign of heart disease.

Both the cerebral and the cerebro-spinal forms of *neurasthenia* are often accompanied by anginal attacks. Dreschfeld gives the following as the characteristic features: (1,) The attacks are short. Cardiac pain is not very great, but there is marked pallor and irregularity of the pulse which often lasts for days; (2,) The attacks come on without any muscular exertion; (3,) The symptoms improve on walking or other slight muscular exercise; (4,) The attacks are often either preceded or followed by insomnia.

In *nicotinism* the anginal attacks are preceded by an irregular, occasionally intermittent, pulse, by palpitations which persist for some time, and in the attack itself there is cardiac pain, usually limited to the heart, and great oppression. The attack is then followed by pallor and sweating, and the pulse may then become slow and show increased arterial tension, or remain quick and intermittent for some time.

In *gout* we may meet with true or false angina, and here the absence of cardiac hypertrophy and of atheroma will assist us in the differential diagnosis. The pseudo-anginal attack is characterized by a more limited pain over the heart, by general vaso-motor disturbances and especially by an irregular and intermittent pulse which may last for many weeks or even months.

In angina from *gastric and intestinal affections* we have the following features: (1,) They come after meals; (2,) There is often epigastric pain with associated pain in the back from the fourth to the sixth dorsal nerve. The anginal pain is præcordial and not so severe as in true angina. The pulse is irregular, there is pallor and often profuse sweating. The attack often lasts several hours. According to Huchard there is in these cases evidence of dilatation of the right heart and increased tension of the pulmonary artery.

Huchard discusses the *prognosis of true angina.* If left to itself the termination is almost always in death. Sudden death may occur during the course or at the end of a painful paroxysm, or, again, by sudden syncope unattended with pain. Angina is an affection eminently liable to syncope—the patient falls as though struck by lightning. In other cases death, though not sudden, is rapid, and may be attended by symptoms of asphyxia instead of syncope. Death may occur slowly with symptoms of asystole in cases where arterio-

sclerosis, involving the coronary artery and cutting off part of the blood supply, at length causes trophic and inflammatory changes in the muscular fibre. These are followed by dilatation of the cavities and of the auriculo-ventricular orifices. In other cases the disease is terminated by intercurrent affections.

The importance which is to be assigned to lesions of the cardiac ganglia is not yet determined. In a few cases chronic neuritis has been found and pigmentary and granular degeneration of the nerve cells. The predisposing causes of sudden arrest of the heart in angina pectoris are probably lesions of the cardiac ganglia and local ischæmia of the myocardium; the exciting causes are spasmodic contraction or thrombosis of the coronary arteries.

Molliére reports a case of angina pectoris where there was found, *post mortem*, carcinoma of the mesenteric and prevertebral ganglia, involving the cœliac plexus. The bronchial and pulmonary ganglia were not involved, and the author suggests the possibility that the angina in this case was caused by irritation of the sympathetic in the abdomen.

REFERENCES.—"Practitioner," Jan., 1890; "La Semaine Méd.," June, 1889; "Gaz. des Hôpitaux," May 21, 1889; "Weekly Med. Rev.," Sep. 14, 1889.

Synopsis.—(Vol. 1889, p. 154.) **Liq. Nitro-Glycerine** (1% solution) ♏ij, taken when attack threatens. **Pyridin** relieves more quickly than any other remedy (p. 63).

(Vol. 1890, p. 134.) **Nitrite of Amyl** gives rapid effects; **Nitro-Glycerine** is slower but more lasting. **Spirit of Nitrous Ether** is often useful. **Belladonna, Stramonium,** and **Hyoscyamus** are useful, and **Tobacco** and **Lobelia** in certain cases. **Chloral, Chloroform,** and **Ether** may be used if others are inadmissible.

ANOREXIA.

Synopsis.—(Vol. 1889, p. 29.) **Tinct. Cannabis Indicæ,** ♏v to x, half an hour before meals in anorexia due to exhausting diseases.

ANTERIOR METATARSALGIA.

Synopsis.—(Vol. 1890, p. 135.) Introduce a convex india-rubber sole pad into the boot, as in flat-foot, but adapted to support of metatarsal heads.

ANTHRAX.

Frank J. Wethered, M.D.

The treatment of this disease has generally been to destroy the local lesion as soon as it is brought under the eye of a surgeon. Various methods have been adopted with this object.

Dr. E. Rinonapoli gives particulars of several cases of malignant pustule treated by the subcutaneous injection of a solution of **Iodoform** in **Ether**. Dr. Rinonapoli began this method in 1886, some thirteen months before Senger's work on the antiparasitic action of iodoform

appeared. The method employed is that of several injections into and around the seat of the pustule of a 10 per cent. solution of iodoform in ether. The pain attending the injections is of severe burning character, but soon passes off. The beneficial effects are rapid in their appearance. In three or four hours after the injections, even in advanced cases, the fever lessens, the swelling round the pustule disappears, the tongue becomes clean, and the patient is able to sleep and to take food. The treatment appears to be of distinctly specific character, and to arrest at once the growth and multiplication of the charbon bacillus. If applied at the outset of the attack, the effect is said to be almost magical.

REFERENCES.—"Bolletino della R. Accad. Med.-Ch. di Napoli," No. 3, 1889; "Lancet," Sep. 21, 1889.

ANTISEPTIC DRESSINGS. *Walter Pye, F.R.C.S.*

Sir Joseph Lister, at a meeting of the Medical Society of London, Nov. 4, 1889, called the attention of the profession to the properties of a new antiseptic dressing. After describing the shortcomings of the preparation of mercuric-perchloride with sal ammoniac which goes under the name of "sal alembroth," especially from its solubility and its irritable action on the skin, he related how he in 1886 experimented with solutions of the **Cyanide of Mercury** in place of the bichloride and found that $\frac{1}{100000}$ part of the salt added to blood serum kept it perfectly free from organic development in spite of inoculation with septic fluid. In continuing his investigations he found the double cyanide of mercury and zinc very insoluble in water but soluble in $\frac{1}{20000}$ blood serum, and that it was even more capable of preventing, in serum and blood corpuscles, development of organisms and putrefaction.

Similar experiments with the biniodide of mercury proved that its asepticity was powerful, but that it was very irritant, so that Sir Joseph turned again to the double cyanide of mercury and zinc, and after many experiments succeeded in overcoming the difficulties of incorporating the antiseptic with gauze, blending it with starch, drying it and rubbing it into a fine powder with **Sulphate of Potash.** Having progressed thus far he called in the manufacturing chemist to provide him with the article on a large scale, and in so doing it was found that the principal constituent was **Cyanide of Zinc,** and that the mercury cyanide was present in much smaller quantities than chemical authorities were led to expect.

Sir Joseph concludes: "I will not at present enter into the details of the preparation of this material; these will be supplied in a note on a future occasion.

"The sketch which I have given you of this investigation, though it has, I fear, wearied you, conveys but a small idea of the toil it has involved. There are those who still believe that the use of antiseptic substances in surgical practice is always useless, if not injurious. The germ theory of septic diseases is indeed now happily established incontrovertibly. All now admit that septic mischief in our wounds depends upon the development of micro-organisms in them derived from without. But the gentlemen to whom I refer are, more or less logically, disposed to trust everything to the antiseptic powers of the human tissues.

"I believe I happened to be the first to direct attention to the antiseptic agency of living structures, and there is perhaps no one who attaches greater importance to it than I do. Without it surgery in former days would have been absolutely impossible. Still I know too well from experience that it cannot always be trusted, and that the use of antiseptic adjuvants is in the highest degree important. And I have the satisfaction of knowing that there is among you a constantly increasing number who, when they have operated on an unbroken skin, with a fair field around for the application of their dressings, if they see septic inflammation occurring in the wound with its attendant dangers, know that it is their fault, or the fault of the antiseptic appliances at their disposal. To those among you who are impressed with this conviction I offer the dressing which I have described as the most satisfactory that I have hitherto met with; and I venture to hope that you will regard it as a not unwelcome addition to your resources."

In a later communication delivered on November 27, 1889, to the Hunterian Society, Sir Joseph described his experiments on the effect of various dyes upon antiseptic powder when the latter was used for charging gauze. After trying several aniline dyes with indifferent results it seems that hæmatoxylin was the one to comply with all the requisite conditions.

REFERENCE.—"Brit. Med. Jour.," vol. i., p. 1, 1890.

ANUS ARTIFICIAL AND FÆCAL FISTULA.

Synopsis.—(Vol. 1890, p. 136.) Treatment: (1,) Plastic operation, freshening edges and suturing; (2,) Pressure by a truss, or strapping the granulating edges together; (3,) Application of caustic, or actual cautery, to edges of fistula; (4,) Where there is a spur: (*a*,) Depressing it by indiarubber tubing passed into upper and lower openings; (*b*,) Gradual division of spur by ligature; (*c*,) Destruction of spur by Dupuytren's enterotome; (5,) Resection and suture of intestine if all else fails.

APTYALISM. (See "Mouth, dryness of.")

ASCITES AND GENERAL DROPSY.

Synopsis.—(Vol. 1890, p. 137.) Milk Diet; Lactose, 100 grammes, as

diuretic; **Milk Diet** with **Tinct. of Iron, Digitalis, Squills,** and **Oil of Juniper**; or **Cinchona, Sulphuric Acid, Sulphate of Iron**; with powder of **Digitalis, Squills** and **Juniper. Calomel** with **Digitalis** in ascites due to hepatic cirrhosis. **Calomel, Faradisation** of abdominal walls in chronic ascites recommended.

ASTHMA. *F. de Havilland Hall, M.D.*

As Dr. Knight well points out, three factors are usually concerned in the production of a fit of Asthma, viz.: (1,) The neurotic habit; (2,) A morbid condition somewhere in the respiratory tract; (3,) The exciting factor, which may be atmospheric, digestive, mental, or other remote irritations, which act by reflex on the bronchial tubes. Treatment in the first place should be directed to the removal of the various morbid conditions of the upper air-passages, which are productive of asthma, such as polypi, a deflected septum, hypertrophied turbinated bodies, and adenoid vegetations in the naso-pharynx. Unfortunately, however, although removal of these obstructions may for a time relieve the asthmatic attacks, they may recur very soon without anything in the nose to account for them. Certainly it behoves us in every case of asthma to make sure that we leave no nasal obstruction which is capable of relief.

In the conditions where the improvement from operation is only temporary, or in which no nasal disease is to be found, we must, of course, look for medical aid, and it should here be noted that a drug which had proved inefficacious in one instance of asthma, will in another case prove of great benefit. Probably no one remedy has given as much relief to asthmatic patients as **Potassium Iodide,**—a remedy which acts directly upon the bronchial tubes. The cases in which Dr. Knight thinks this remedy is most apt to give relief are those in which there is present more or less bronchitis, as it may be expected to thin the bronchial secretion, and possibly facilitate expectoration; further, it depresses the heart and lowers blood-pressure. It may also act in resolving old thickenings in the bronchial tract, which serve as a source of irritation. A large dose is often necessary for relief, and rapidly-increasing doses may be given until 20, 30, 40, or more grains are given three times a day. It should be given on an empty stomach, largely diluted with milk, and without any admixture of syrups. The iodide seems especially serviceable in cases which are hyperæmic, or due to the vaso-motor paresis. In those cases in which it would seem as if bronchial spasm was the principal feature, the use of the **Nitrites** gives relief. The **Amyl Nitrite, Nitroglycerin,** and **Sodium Nitrite,** theoretically, should all have about the same action, but the author states that he has never been able to

get the same decided effect from the sodium nitrite as from the others, perhaps because too small doses were employed. Dr. Pearse gives the nitrite of sodium in from 3 to 5 grain doses, frequently repeated, and has found the combination of 1 drachm of tincture or succus of **Hyoscyamus** with the nitrite very efficacious. **Arsenic** and **Strychnine** relieve, probably, by their action upon the neurotic base. They are particularly indicated in what are called the paralytic cases, in which there does not seem force enough in the respiratory muscles to empty the lungs of air.

Dr. T. J. Mayo has seen great benefit result from the combination of **Strychnine** and **Atropine** given subcutaneously. He begins with $\frac{1}{50}$ of a grain of strychnine and $\frac{1}{150}$ of a grain of atropine daily, gradually increasing the former to $\frac{1}{20}$ or $\frac{1}{25}$ of a grain and the latter to $\frac{1}{100}$ of a grain. After a thorough impression is made on the disease the drugs are administered every other day, and, as the patient improves, are gradually abandoned.

In seeking to obtain immediate relief from the paroxysms of asthma, assistance may be found in some cases from a subcutaneous injection of **Morphine**, the relief from which is more lasting than that obtained from other drugs. Asthma may in one case be due to a spasm of the bronchial muscle, and in another to vaso-motor paresis; therefore the subcutaneous injection of morphine is more apt than any other drug to give a favourable result. Still, it is true, that while in many cases it would prove highly successful, yet in others it will entirely fail to give relief and may even induce an attack. Dr. Knight explains the relief which morphine gives as due to its producing contraction of the small vessels, so relieving the hyperæmic form of asthma, while the spasmodic form is relieved, on the other hand, by its direct sedative action on muscular tissue. On the other hand, the fact that morphine sometimes produces an attack of asthma is explained by its reducing the sensibility of the respiratory centre, inducing an attack in the same way as sleep does. The **Nitrites**, in one form or another, give relief to many cases. This has been usually ascribed to direct sedative action upon the bronchial muscles. Dr. Knight suggests that, perhaps, in those cases which seem not to be relieved, but even to be aggravated by them, that there may be already a vaso-motor paresis, which is aggravated by the nitrites. **Grindelia** gives relief in very many cases, apparently acting as an antispasmodic, as lobelia does, but is a much safer remedy than the latter. **Coffee**, according to Hyde-Salter, acts by counteracting the tendency to sleep, and the consequent diminished sensibility of the respiratory centre. Dr. Maxwell recommends the inhalation of the fumes of **Bromide of Ammonium**; he has

generally found that a few whiffs relieve the wheezing in a surprising manner.

Dr. Knight thus calls attention to two very important points,—first, that certain cases are relieved by operative means in the upper air-passages; and, second, that the pathological conditions in an attack of asthma are not necessarily always the same, and relief is only to be expected by a correct recognition of the cause of the paroxysm.

REFERENCES.—"Boston Med. and Surg. Jour.," Jan. 23, 1890; "Lancet," vol. i., p. 240, 1890; Ibid., pp. 1012 and 1068; "New York Med. Jour.," April 12, 1890.

Synopsis.—(Vol. 1889.) **Bidens Pinnata** in decoction for hay asthma (p. 24); **Delphinium Staphisagria**, (gr. $\frac{1}{60}$ of delphine) during spasm (p. 37); **Hydriodic Acid Syrup** given in increasing doses until ʒij are taken thrice daily, useful in chronic asthma; **Onobaio** is suggested as a remedy (p. 57); **Solanin**, grs. ij$\frac{1}{3}$ to iv$\frac{2}{3}$ daily (p. 67); **Veratrum Viride** in peptic asthma, using a 1% solution of the fluid extract; dose, gtt. x to xx (p. 43).

(Vol. 1890, p. 138.) **Lobeline** hypodermically, gr. $\frac{3}{4}$ to vj daily for adults, gr. $\frac{1}{8}$ to $\frac{3}{4}$ for children. **Menthol**, 20% solution in olive oil, inhaled to relieve asthmatic attacks.

BERI-BERI, TROPICAL ANÆMIA, and ANCYLOSTOMIASIS.

Synopsis.—(Vol. 1890, p. 140.) **Thymol**, powdered, three doses of 30 grs. each at intervals of two hours to dislodge the ancylostoma; 180 grs. in four doses have been used at intervals of four hours.

BLADDER. (See also "Lithotomy," "Prostate," etc.)

E. Hurry Fenwick, F.R.C.S.

Tuberculosis of.—Mr. Battle records a very important case of cure of a large tubercular ulcer of a woman's bladder after suprapubic cystotomy and thorough scraping, other methods having failed. The girl was aged twenty, with a family history of phthisis. The ulcer measured two inches by one and a half inch.

Koch's Method.—From experience of Koch's method of treating tuberculosis gained in the Berlin clinics—notably that of Prof. Bergmann, the reporter would advise a very small dose being administered on account of the local swelling of the foci of disease. This swelling sometimes leads to the most distressing dysuria, and even to retention.

Foreign Bodies in.—Professor Guyon draws attention to an ingenious sort of crochet hook guarded in the bulbous end of an olivary bougie. This passes easily into the bladder, and would catch any cord-like foreign body, such as a thin bougie, without difficulty.

Electric illumination of.—Much additional knowledge has accumulated upon this new procedure. It is now generally allowed that the Nitze method is a great advance in the diagnosis and treatment of obscure reno-vesical diseases. It is admitted, however, that

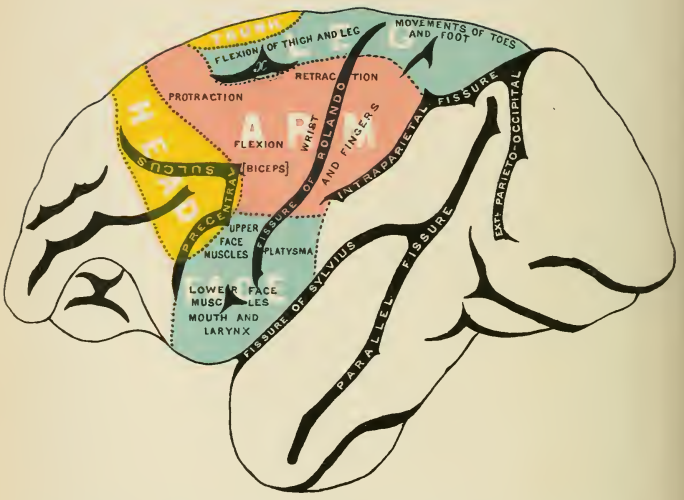

PLATE 1. *Motor areas according to Horsley and Schäfer.*

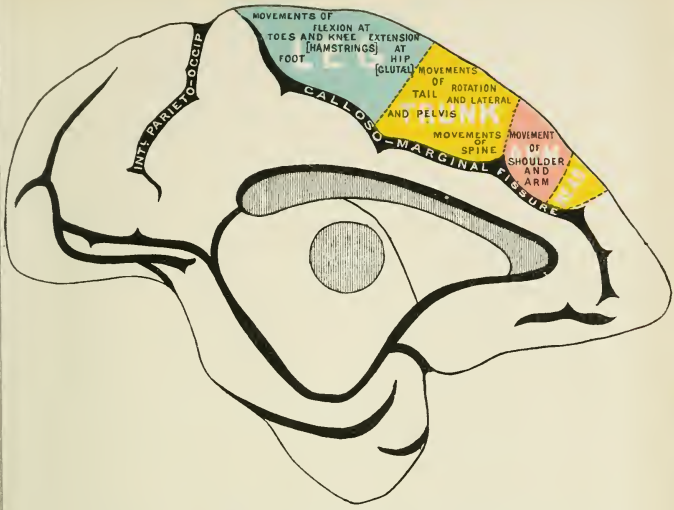

PLATE II. *Motor areas according to Horsley and Schäfer.*

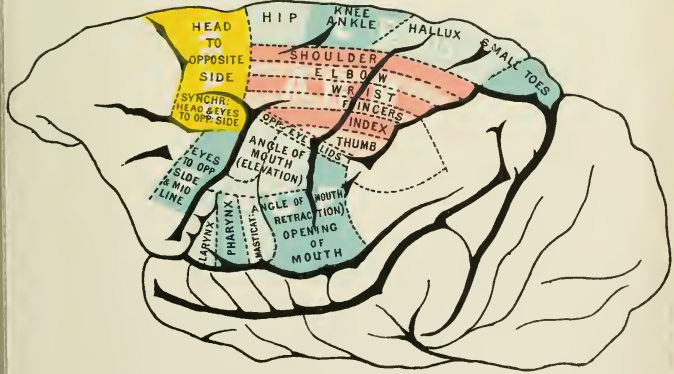

PLATE III. *Motor areas according to Beevor and Horsley.*

an accuracy in diagnosis and prognosis is only obtainable by long practice in the use of the cystoscope. In cases of confirmed tuberculosis, and in recent renal hemorrhage, traumatic or otherwise, it is contra-indicated.

REFERENCES.—Battle, "Brit. Med. Jour.," p. 1011, pt. i., 1890; "Clin. Soc. Trans.," 1890; "Med. Ann.," 1889-90; Wallace, Electric Cystoscopy, "Edin. Med. Jour.," Feb. 1890; Helferich Cystoskopie, "Munich Med. Wochens," No. 1, 1890; Austin, Sur le Diagnostic Precoce des nesoplasms de la Vessie, 1890; Poirier, Catheterism of Ureters, "Lond. Med. Recorder," Dec. 20, 1889; Bruce Clarke, Report of four cases, "Brit. Med. Jour.," Oct. 18, 1889; Hurry Fenwick, Ibid., Abstract Report of two hundred cases; Buckhardt, "Endoskopie," Tubingen, 1889.

BOILS.

Synopsis.—(Vol. 1889, p. 27.) Calcium Sulphide, gr. $\frac{1}{100}$ to check suppuration, or gr. $\frac{1}{2}$ to hasten it.

BRAIN AND CEREBRO-SPINAL SURGERY. *W. H. Elam, F.R.C.S.*

Cerebral Localisation.—Dr. Ferrier, in the Cronian lectures for the last year, goes very fully over the ground of the functions of the cerebral cortex as motor and sensory centres. He discusses the question from experimental and pathological data. Into the history of the experiments by physiologists, and the grounds for the conclusions therefrom, it is not the place here to enter. The results, so far as they concern brain surgery, will be briefly given; the methods by which these theories have been established must be discussed elsewhere.

The accompanying diagrams will serve to illustrate the subject-matter; they are the illustrations of the topography of the cortex of monkeys, as ascertained by electrical stimulation. As there is every reason for believing that the functional relations of the human cortex are identical with those of monkeys, the diagrams may be taken to apply to the human brain.

It will be seen that there are three large areas on the surface of the cerebral hemispheres, viz.: an anterior (prefrontal), or posterior (occipital and parieto-occipital), and a central.

The two former, so far as is at present known, are sensory—or at least not motor in their function. These will be referred to afterwards. The central area is probably entirely motor. It is limited in front by a line drawn at right angles to the precentral-sulcus (*vide Plate I.*), below by the fissure of Sylvius, behind by the intraparietal sulcus, and internally by the calloso-marginal fissure.

Between the anterior boundary of the motor centre and the precentral sulcus and continued up to the longitudinal fissure, is an area

stimulation of which causes opening of the eyes, dilation of the pupils, and movement of the eyes and head to the opposite side (*vide Plate II.*).

At the upper extremity of the ascending frontal and parietal convolutions and postero-parietal lobule, and extending over the margin of the hemisphere into the posterior part of the marginal convolution, is an area stimulation of which causes movement of the lower limb. Behind the fissure of Rolando the movements are of the toes and foot, anterior to this fissure, of the leg and thigh. By using minimal stimulations the movements of the big toe can be differentiated (*vide Plate III.*)

Below the leg area and in front of it, occupying about the middle third of the motor area, is the motor centre for the movements of the upper extremity. The area for the arm is in the upper part, that for the hand and digits in the lower and back part of the area. By stimulation at the lower extremity of the intraparietal sulcus, movements of the thumb can be elicited.

Below the arm area, and occupying the lower third of the central convolution, is the area for the movements of the face, mouth, and tongue. In the upper part of this area are centres for the movements of the upper facial muscles and the platysma, the former being in front and the latter behind the fissure of Rolando.

By stimulating the lower portion of this area, movements of the mouth and tongue are excited, protrusion of the tongue being produced by stimulation in the anterior part and retraction by stimulation in the posterior part.

Excitation of the lower extremity of the ascending frontal convolution causes phonatory closure of the vocal cords. This centre is bilateral, and to get the specific effect it is necessary that the centre in question should be destroyed on either side.

As already stated for the leg, the areas for the head, eyes and arms extend over the marginal convolution as far as the calloso-marginal fissure. Excitation of the areas for the trunk and lower limb on the mesial aspect, cause, from before backwards and in the following order, movements of the spine, tail, and pelvis ; extension of the hip, flexion of the leg, and, lastly, movements of the foot and toes.

Stimulation of the *angular gyrus* causes movement of the eye-balls, and occasionally of the head to the opposite side. Stimulation of the *occipital lobe* causes undecided and uncertain movements of the eye-balls, but probably neither the occipital region nor the prefrontal region have any function as motor areas.

In regard to the *occipital region* there are many facts in favour of

accepting the theory that they are visual centres. Ferrier thinks that both the occipital lobes and the angular gyri are concerned with visual perceptions in such a manner that each occipital region is connected with the corresponding lateral half of each retina, and that a part only of the cortex of this region is capable of taking on the function of the whole.

Other facts related hereafter illustrate the above statement in regard to the functions of the posterior part of the cerebral cortex.

Considerable obscurity and diversity of opinion, however, exists amongst experimenters.

The following are the recent observations of Dr. Bechterew, who has investigated the relations of the cortex to vision. He finds the area, which is associated with vision, very extensive and occupying the whole of the occipital lobe, both on its outer and inner aspects, as well as a considerable part of the adjoining parietal lobe. In this area are two centres, one overlapping the other. The parietal division is associated with corresponding halves of each retina, and the other, the occipito-parietal, corresponds to the whole of the opposite retina.

Auditory Centre.—Dr. Ferrier says that of twenty-five cases of word deafness, of which he had complete notes, ten were from lesions of the temporal lobe alone ; in seven of these the first temporal gyrus was particularly affected, and in eight were lesions affecting the angular as well as the upper temporal gyrus ; in six were lesions affecting adjoining parts of this gyrus, as well as this gyrus itself. In all there was obvious lesion of the superior temporal gyrus. Auditory discharges, or other auditory disturbances of sensation, have been frequently met with in connexion with irritative lesions affecting the gyrus, and in cases of deafness of many years standing extensive atrophy of this gyrus has been found, especially on the left side.

In regard to the prefrontal region, nothing very definite has been proved. Destruction of the frontal area causes a conjugate deviation of the head and eyes, and a temporary paralysis of the movements for elevating the eyelids and dilating the pupils.

In regard to the surface relations of the skull to the motor areas of the cortex of the cerebrum, very careful illustrations were given in last year's "Annual." Cases recently recorded give much valuable information as regards details of operations. The reader may also be referred to Prof. Alex. Fraser's beautiful photographs in his book, "Guide to Operations on the Brain."

The Lateral Sinus.—Dr. Birmingham, Dublin, has made experiments to define the external landmarks of the lateral sinuses of the skull. He concludes in opposition to some of the anatomical statements that the sinus does not run horizontally forwards from the occi-

pital protuberance, but is distinctly arched. From the protuberance it ascends either rapidly or gradually above the base line until it reaches a point about one and a half inches behind, and three quarters of an inch above the centre of the bony meatus ; here it bends sharply, and runs down in front of the posterior margin of the mastoid process, and about half an inch behind the meatus ; it then turns in to the jugular fossa, about a quarter of an inch below the level of the meatus.

The floor of the cranium is nearly four sixteenths of an inch above the roof of the meatus. These relations are subject to much variation. The antrum of the mastoid may be drained by sending a quarter inch drill straight in at such a point that the margin of the hole which it makes shall lie as near as possible to the posterior margin of the meatus, and immediately beneath a line drawn horizontally backwards through the extreme upper border of the meatus. In most cases the drill enters not the antrum but the cells of the mastoid, yet is just as effectual. A one third inch trephine is the best.

The site usually selected for trephining in cerebellar abscess is quite safe as regards the lateral sinus, but the occipital artery, when it lies in the groove of the mastoid is wounded, and the bone here is very thickly covered. A point two inches behind the centre of the meatus and one inch below the base line would give a site more superficial and safe from both artery and sinus.

Brain surgery is now in a somewhat similar condition to that of abdominal surgery some years ago. Surgeons are afraid of the brain, or too much in the habit of letting the favourable moment for operation go by, on account of their fear of the consequences of interfering with the skull and its contents. A large number of cases have been recorded during the year which are of great interest, but our space only permits us to furnish references to them.

REFERENCES.—"Brit. Med. Jour.," p. 1355, June 14, 1890 ; Ibid., May 17, 1890; Ibid., Sept. 20, 1890 ; "Jour. de Méd. Pract.," Oct., 1890 ; "Ann. of Surg.," vol. xi., p. 186 ; "Zeit. für. Chir.," B. 23, H. 3 and 4 ; "Ann. of Surg.," vol. xi., p. 200; Ibid., vol. xi., p. 84 ; "Cent. f. Chir.," Nov., 1890 ; "Rev. de Chir.," p. 530 ;" Brit. Med. Jour.," p. 1286 ; "Revue de Chir.," p. 846 ; "Lancet," May 17 and 24, 1890 ; "Brit. Med. Jour.," June 28, 1890 ; Ibid., March 22, 1890 ; "Deut. Med. Woch.," No. 10 ; "Brit. Med. Jour.," June 28, 1890 ; Ibid., Feb. 1, 1890 ; "Lancet," July 5 and 12, 1890 ; "Jour. de Méd. Pract.," Oct., 1889; "Brit. Med. Jour.," Mar. 14, 1890 ; Ibid., vol. i., p. 10 ; Ibid., May 4, 1890 ; "Annals of Surgery," vol. xi., p. 358 ; "Jour de Méd. Pract.," Oct., 1890 ; "Rev. de Chir.," p. 846; "Lancet," Sept. 13, 1890; 'Brit. Med. Jour.," p. 1292 ; "Brit. Med. Jour.," June 28, 1890;" Lancet,"

Nov. 22, 1890; "New York Jour. of Med. and M. Dis.," Aug., 1890; "Rev. de Chir.," p. 311; "New York Med. Jour.," June 29, 1889; "Annals of Surgery," vol. x., p. 18; Ibid., March, 1890.

BRAIN SOFTENING.

Synopsis.—(Vol. 1889, p. 13.) Amylene Hydrate, iijss grammes, as hypnotic, especially if cramps cause insomnia.

BREAST.

Synopsis.—(Vol. 1890, p. 178). For enlargement of breasts, with excess of adipose tissue, the following has been advised: ℞ Iodoformi 1 part, Vaseline 15 parts, Ol. Menth. Pip. q.s. Ft. Ung.

BRIGHT'S DISEASE. *Robert Saundby, M.D.*

At the German Medical Congress, held at Vienna last spring, there was a discussion on the treatment of Bright's disease, which was opened by Prof. Senator. He said that it was not possible to treat chronic nephritis from its causal indications, and that interference is necessarily limited to the treatment of symptoms. He is opposed to counter-irritants, even in acute renal disease. Under these circumstances the rôle left to the physician is the careful conduct of a "functional" cure.

The prevention of accumulation in the economy of toxic substances, difficult to eliminate, is therefore the first part in the treatment of chronic parenchymatous nephritis, and this is reached by suitable regulations of diet. Little albumen should be given, and larger quantities of fat and carbohydrates. Thus, in the adult, the diet should be confined to 1265 grains albumen, 480 grains fats, and 7500 grains carbohydrates, or one-half the quantity of albumen may be given, provided the fats be doubled or trebled. Albumen cannot, however, be entirely left out of the diet, otherwise the digestion of carbohydrates and fats will be seriously interfered with. Of the fats which are especially readily digestible, he gives the preference to cod-liver oil and cream. As regards albumen, milk contains enough for the needs of the patient, and he confirms the general statement that milk diet is an excellent *régime* in the case of Bright's disease; but, although two to three quarts may be given a day to a patient, he does not advise the restriction of the patient to an exclusive milk diet, for in time he will become absolutely incapable of taking it. It is well to mix with the milk a little brandy or other substance, which may be left to the choice of the patient. Koumiss or képhir is likewise of value, particularly on account of the alcohol and lactic acid which it contains. Amylaceous substances, especially the milk of almonds, give excellent results, while meats which are poor in ptomaines, such as the white meats, fish, etc., are especially to be recommended.

Eggs may be given, since Oertel and Schreiber have determined that the ingestion of eggs does not produce albuminuria, and does not

increase the albuminuria already present. Nevertheless, eggs in too large quantity are dangerous. Large quantities of liquid are to be recommended in chronic Bright's disease, but beer, on account of its richness in extractive matters, is absolutely contra-indicated. Muscular activity, leading to the production of extractive matters, which tend to accumulation in the organism, is very dangerous, and the exercise of the patient should be limited as much as possible. As regards diuretics, digitalis, strophanthus, and caffeine should be carefully watched, but may occasionally prove of service. As chronic nephritis is most often associated with general arterio-sclerosis, iodide of potassium may prove of value, but attention then should be directed towards the heart. Smoking should likewise be forbidden, for tobacco in these cases exercises a deleterious action on the cardiac blood-vessels.

Ziemssen regarded the true treatment of albuminuria as milk diet joined to the most rigorous attention to hygiene. Hot-water or vapour baths, digitalis and theobromine may be used to stimulate the circulation. Cream of tartar is the best cathartic. Capillary drainage is useful, but the tubes should not be left more than twelve hours in position, and should be always carefully covered with antiseptic dressing. In chronic interstitial nephritis the patients should be sent to a warmer climate, a regular mode of life enjoined, and iodide of potassium prescribed for a long time.

Mosler thought that calomel would largely prevent uræmic accidents.

Winternitz recommended massage as a substitute for exercise.

Ewald spoke of the value of peptonized milk, with added cream, and of iodide of potassium in doses as large as 150 grains daily. He effected diuresis by a mixture of calomel and digitalis powder.

Grainger Stewart, at the Berlin Congress, opened a discussion on the same subject. He laid great stress on hygiene, a warm climate, woollen clothing, light diet, and attributed little power to drugs. He recommended massage in the treatment of chronic dropsy, a good suggestion, which we commend to the notice of our readers.

Synopsis.—(Vol. 1889, p. 182.) ℞ Tinct. Cannabis Indicæ, ♏xv to xx; Chloral Hydrat., grs. x; Pot. Bromid., ʒss, allays distress and produces sleep. For uræmia Sod. Benzoat., given hourly in doses amounting to ʒj or ʒij daily in solution, wafers, capsules, or enemata. Dr. Andrew recommends Hot-Hair Baths, Pilocarpine, dry cupping over loins and internally, ʒss doses Liq. Ammon. Acet., with Vin. Antimon., ♏xv to xx, if pulse be unusually firm; to check fits Chloral Hydrate, grs. v, hourly or half-hourly, a single dose of x grs. may be given at first; Tinct. Nucis Vom. instead of Vin. Antimon., if fits persist; to aid heart Digitalis is preferable to alcohol, and may be combined with Sod. Benzoat. ℞ Sod. Benzoat, gr. x, Tinct. Digital, ♏x, Aq. ad ʒj. M. Sig. every six hours. Pulque or Agave Wine, ʒi to ʒjss dose (p. 62).

(Vol. 1890, p. 180.) Alum, gr. xx t.d. freely diluted, in obstinate hæmaturia. To relieve arterial tension, a 3% solution of Nitrite of Ethyl in absolute alcohol, with 5% Glycerine added; dose ℥ss. For the cardiac distress and headache of Bright's, use Paraldehyde in ℥ss doses, well diluted. Morphia hypodermically in uræmia with dilated pupils. Pilocarpine, hypodermically, reduced the anasarca of acute and sub-acute Bright's, using gr. $\frac{1}{8}$ twice daily at first, then daily, and finally on alternate days.

BROMIDROSIS.

Synopsis.—(Vol. 1880, p. 184.) Tinct. Belladon., or Atropine, hypodermically, gr. $\frac{1}{150}$ increased to gr. $\frac{1}{60}$; Ext. Ergot Liq., ℥ss. t.d., or Sulph. Præcip., a teaspoonful in milk twice daily, and combined with astringents if purging ensue (Crocker). *Locally*, Lin. Belladonn.; Faradisation (Hebra). Ung. Litharg., changed twice daily, and used for a fortnight; strapping firmly with Lead or Soap plaster (Duffin); dusting stockings and boots with finely powdered Boracic Acid (Thin); washing in Boracic solution daily; sponging with 1% solution of Quinine in Alcohol (Fox); Naphthol, Boracic, and Salicylic Acids, grs. x to xxx, Aq. ℥j; Lanolin or Alcohol (Shoemaker) Boroglyceride, in 50% solution, or Oxalic Acid, grs. x to xx, Aq. ℥i.

(Vol. 1890, p. 182.) Wash the feet in hot water and some Bland Neutral Soap, dry, and dust with B Salicylic Acid 3·0, Talc 87·0, Powdered Starch 10·0: M. Change stockings frequently and avoid patent leather boots or indiarubber overshoes. Chromic Acid, 5 to 10% solution, applied to soles every three or four weeks with a brush; 5% only if there is any broken skin.

BRONCHITIS. *F. de Havilland Hall, M.D.*

Dr. Baner speaks very highly of the use of **Fluid Petroleum Sprays** in the treatment of respiratory affections.

The advantages of an inhalation which has as its basis a bland fluid petroleum product are very many. The light specific gravity of the fluid and its oily consistence cause it to be readily broken up by an ordinary atomizer into a light cloud without the use of any other apparatus. This spray can be inhaled as easily as the smoke from a cigar or cigarette; and, used after as much as possible of the residual air has been expelled from the lungs by forced expiration, it undoubtedly penetrates to the pulmonary vesicles. All danger of catching cold, which is present to a certain extent after the use of aqueous inhalations, is entirely absent with these oily preparations. In fact, the coating of the respiratory tract with a bland protecting substance like vaseline must necessarily much diminish any such tendency. The field of aqueous inhalations in acute inflammations of the lower air-passages is necessarily very limited. With these oily vapours, on the other hand, it is very considerable.

Dr. Baner testifies from his personal experience with acute bronchitis that a spray of warmed vaseline inhaled into the bronchi very much relieved the irritation, and according to his belief materially shortened the attack. As regards the apparatus to be used for this form of

inhalation, an ordinary atomizer is all that is required for the fluid preparations. If vaseline is employed it is necessary to have some apparatus in which it may be warmed and brought to a fluid consistence. In acute and chronic bronchitis and phthisis this method of inhalation has been found of use, and it is worthy of trial in affections of the upper respiratory passages in the nose, naso-pharynx and larynx.

REFERENCE.—"New York Med. Jour.," March 22, 1890.

Synopsis.—(Vol. 1889, p. 185.) ℞ Potass. Citrat., ʒj; Succi Limonis, ʒjss; Syr. Ipecac. (U.S.P.), ʒss; Tinct. Opii. Camph. ʒiij; Syrupi, q.s., ad ʒiij. Sig. ʒij, sec. hor. in early stages. **Cerium Oxalas,** in chronic or acute cases, grs. v as initial dose, increased to gr. x frequently, given dry on empty stomach. **Terpin-Hydrate** in chronic bronchitis of the aged; also **Menthol** inhaled; **Pix Liquida Liquor,** ♏vi to x; **Syr. Picis. Liq.** (U.S.P.), ʒij to iv, ʒtis hor. or oftener. This may be flavoured with **Syr. Pruni Virginiæ,** and addition of **Apomorphine** renders it most efficacious. **Hydriodic Acid Syrup,** increasing the dose up to ʒij t.d. in chronic bronchitis, even when **Potassium Iodid.** is not tolerated (p. 45). **Calcium Sulphide,** gr. $\frac{1}{10}$ (p. 27).

(Vol. 1890, p. 183.) **Terpene,** 10 to 60 centigrammes daily, for children from six to ten years of age, in the form of elixir, wine, pastils, or paste.

In Plastic Bronchitis: ℞ Potassii Iodidi gr. iij, Potassii Bicarb. gr. xv, Ammonii Carb. gr. iv, Vini Antimon. ♏v, Aq. ad ʒj. every four hours. It does not prevent formation of false membrane, but helps the coughing of it up. The dose of Ammon. Carb. may be afterwards increased, and Squill and Senega added. **Mercurials,** inhalation of **Alkalies** (especially **Aqua Calcis**), emulsion of **Turpentine** or **Copaiba, Antiseptics, Arsenic,** etc. have been recommended. Removal to a warm, soothing climate is probably best.

Inhalation of **Oxygen** has been beneficial in capillary bronchitis of children.

BRONCHO-PNEUMONIA.

Synopsis.—(Vol. 1890, p. 185.) Use of **Ice-bag,** irrespective of the cause of the disease, the effect being most marked in very young children. Leiter's tubes may be substituted. In severe cases, two ice-bags may be placed on head, and one over the chief consolidation in lungs.

CAISSON, or Tunnel Disease. *Graeme M. Hammond, M.D., New York.*

Under this title Dr. J. Leonard Corning contributes an interesting paper. The caisson or tunnel disease is an affection of the spinal cord due to a sudden transition from a higher atmospheric pressure to a lower one, and is characterized by pain, which may be mild when confined to some portion of one or more extremities, or of frightful intensity when it appears in the ears, knees, back, or abdomen; anæsthesia and paralysis, usually of a paraplegic type, retention or incontinence of urine, and sometimes rectal incontinence. Cases of minor severity usually recover in one or two weeks, while those of a graver type require a much longer time. Unquestionably the best of all remedies is

to return the patient to the condensed atmosphere as soon after the outbreak of the characteristic symptoms as possible. **Ergot** sometimes relieves the pains in a short time, but sometimes **Morphine**, in doses of ¼ to ½ grain is necessary. **Dry Cups** to the spine often give relief.

REFERENCE.—"Medical Record," May 10, 1890.

CALCULI (Renal and Vesical). (See also "Bladder" and "Kidney.")

Synopsis.—(Vol. 1889, p. 61.) **Pichi Fl. Ext.**, ♏xv to ʒj t.d. Probably more antilithic than solvent, contra-indicated in albuminuria.

CANCER.

Synopsis.—(Vol. 1889, p. 70.) **Tinct. Thuja.**, gtt. xx to lxxv per diem; said to check evolution of cancer and lessen offensive odours of ulcerative period; may palliate epithelioma of larynx.

CANCRUM ORIS. *Henry Dwight Chapin, M.D., New York.*

Drs. Peter Yates and E. C. Kingsford give the histories of three severe cases of cancrum oris successfully treated by the local application of **Corrosive Sublimate.** A solution of bichloride of mercury (1 in 500) was applied for this purpose. This treatment was adopted on the assumption that the disease was due to some micro-organism.

REFERENCE.—"Lancet," May 4. 1889.

Synopsis.—(Vol. 1890, p. 193.) Cut away sloughs and swab the surface freely with **Perchloride of Mercury Solution**, 1 in 500, then dress with lint wetted constantly with a 1 in 1000 solution.

CARBUNCLE.

Synopsis.—(Vol. 1889, p. 196.) **Carbolised Spray; Steam Spray of Ac. Carbol.**, 2% solution.

(Vol. 1890, p. 193.) Wash the carbuncle with solution of **Carbolic Acid**, 1 in 40, or **Perchloride of Mercury**, 1 in 2000, then dust with a powder of **Iodoform** and **Zinc Oxide**, equal parts, and then cover with **Lint** soaked in **Carbolic Oil**, 1 in 40, renewing dressings once or twice daily.

CATARACT. *W. Lang, F.R.C.S.*

The means at our disposal for removing a senile cataract have not been increased during the year, but much has been written on the subject.

Dr. Chisholm, of Baltimore, has given up for the last four years all bandages, contenting himself with closing the lids, of the operated eye only, with a piece of pliable silk plaster. As a consequence he is able to allow the patients greater freedom since they are not so helpless, having the use of one eye to guide and protect themselves. They are treated in an open ward or room without confinement to bed. His results are perfect; no redness, photophobia or lachrymation, and the wound heals more readily and with less displacement of the cut edges than under the old treatment. This treatment, without bandages, he adopts for all operations where the globe is incised.

Mr. McKewan, of Belfast, has modified his means of washing out the clear cortex, but otherwise is perfectly satisfied with the treatment. In this he is supported by Dr. Lee, of Liverpool. That the plan is very valuable, when the cortex does not escape with the nucleus, there is not the least doubt, especially when operating on immature cataracts, about which there is always a little uncertainty as to the way the lens will escape ; but in some cases with an almost clear cortex the lens comes out perfectly whole, and again, in an apparently similar case the cortex remains behind. It would be a great gain if it were possible in any way to foretell how the cortex would behave.

Prof. McHardy has been treating all immature lenses by Forester's method of maturation, performing a preliminary iridectomy, and while the anterior chamber is still empty, rubbing the lens, with a cataract spoon, through the cornea. By this means the cortex is made opaque and escapes readily when the cataract is removed at the end of six or eight weeks.

On the Continent and in America many operators still advocate extraction without iridectomy ; but that they are not all pleased with their results may be seen by the manner in which the corneal section is being shifted from place to place, some of the continental surgeons making the puncture and counter-puncture at the ends of the transverse diameter of the cornea and then cutting but slightly upwards, a pure corneal section, well away from the periphery except at the points of entrance.

Knapp, of New York, whilst operating without iridectomy makes his section in the capsule well in the periphery, thus avoiding the risks of irritation by any cortex which may not escape. He recognizes that this makes it necessary to divide the capsule subsequently more often than would otherwise be the case, but on the other hand his visual results are very perfect. He divides the capsule very early after the extraction, within three weeks, which certainly has its advantages in rendering the section a very simple operation. The sooner it is done the softer is the capsule, and *vice versa*, the longer the tougher.

The writer, however, finds that the large peripheral section at the sclero-corneal junction, with a conjunctival flap, an iridectomy, made in two cuts, and the peripheral section of the capsule, with, if necessary, an early subsequent needling of the capsule, gives ideal results.

CHALAZION.

Synopsis.—(Vol. 1890, p. 197.) Ray injects 2 drops of **Cocaine Solution** into the cyst duct (after squeezing out some of the fluid) and puts a third in the conjunctival sac. Three minutes after, he incises the cyst at the palpebral margin, cleans it out with a sharp curette, and injects **Perchloride of Mercury Solution**, 1 in 2000.

CHILBLAINS.

Synopsis.—(Vol. 1889, p. 199.) Ung. Iodi. or Tr. Iodi. in early stages, Tr. Camph. Co. and Tr. Belladonna, equal parts; rubbed in night and morning; when ulcerated, Ung. Calaminæ, B.P., or wet Boracic Lint covered with oil silk (Crocker).

CHLOASMA, MELASMA, MELANODERMA.

Synopsis.—(Vol. 1889, p. 200.) Corrosive Sublimate, grs. ½ to v to Almond Emulsion, ℥j, dabbed on several times a day; Ac. Carbol. Pur. applied with a brush; Veratria, grs. x to xx, to Adipis, ℥i (Crocker). Paste of Sulphur and Acetic Acid (Neumann). Peroxide of Hydrogen (Piffard). A layer of Chrysarobin dissolved in Chloroform with Traumatican brushed over as protective (Selon). ℞ Hyd. Chloridi Corrosivi, gr. x; Sp. Vin. Rect., ℥ij; Aq. Rosæ ℥ij, M. Ft. Lot. (Shoemaker).

CHOLERA. *Alexander Crombie, M.D.*

Plurality of species of the Comma-Bacillus.—The position of those who have been unable to give their adhesion to the doctrine of the causal relationship between cholera and the comma-bacillus of Koch, has been materially strengthened by the discovery that there are not one, but several distinct species of commas associated with that disease. When Dr. D. D. Cunningham wrote his paper (March, 1890), he had found three distinct species, but since that time the number (August) has risen to eight, and there are probably more, differing from each other in morphological as well as in physiological characters. At first the materials when cultivated gave pure, or almost pure, growths of each species, but in one instance the crop of commas was mixed with Klein's small straight bacilli; in one cholera stool three distinct commas were found co-existing; and at certain seasons of the year a considerable proportion of cases recorded in Calcutta by hospital physicians of extensive experience of the disease, failed to give any evidence of the presence of any cultivable comma-bacilli in the discharges. The material for Dr. Cunningham's observations was fresh cholera stools, obtained from the three principal hospitals of Calcutta as the cases occurred, and none of the commas described by him appeared to be identical with the comma-bacillus of Koch. The rate of growth, the rate of liquefaction of the gelatine, the temperature necessary for their growth on potatoes, were all different for each species, but it was by the peculiar character of their growth on potatoes that they were most clearly distinguished. In one it forms a thick, slimy, creamy stratum, with a smooth glistening surface, and prominent tabulated margins surrounded by a zone of detached islets of similar material; the colour, at first pale yellowish, not unlike a stratum of thick healthy pus, becomes gradually primrose, and ultimately strong yellow, with a peculiar yeasty, vinous odour. In another, the stratum is thin, diffuse, at first almost white, ultimately

assuming a brownish tint resembling a thin crustaceous lichen-thallus, with a characteristic mawkish choleraic odour. In others, the colour is greyish white, buff, pink or red. When tube cultivations of these growths are made in agar-agar nutrient gelatine, pure cultivations of typical commas, presenting features identical with those in cultivations obtained from the evacuations, are obtained. They also differ from each other when treated with nitric and sulphuric acids, in respect of the so-called "Cholera-reaction." We are in a position to state that Cunningham's observations have been confirmed by Klein, who found at least five distinct species of commas in the cultivations forwarded to him by Cunningham, one of which did not liquify gelatine.

Mr. Dowdeswell describes phases in the growth and development of comma-bacilli on the warm stage of the microscope so different from the traditional behaviour of Koch's comma, that there can be little question that he was observing a different species, and, indeed, it is difficult to account for the diametrically opposite statements made by equally experienced and acute observers, on such points as the capacity for spore-formation, except on the supposition that they were dealing with different species of comma-bacillus. This question of the cholera-bowel being the habitat of many species of comma-bacilli besides that of Koch, is the most interesting that has arisen since his discovery, especially in regard to the relationship which any one of them may have to the disease.

The "Cholera-reaction."—In the end of 1885, Bujwid noticed that cholera cultures gave with mineral acids, and some organic acids, a red colour. More lately he has maintained that this reaction may be used as a means of distinguishing Koch's comma-bacillus from all other bacteria. He asserts that a 5 to 10 per cent. solution of hydrochloric acid causes in cholera cultures a rose-violet colour which is characteristic of the comma-bacillus; that no other bacteria give this colour under like circumstances; that as this reaction can be obtained in cultures which are only 10 to 12 hours old, it forms an easier and quicker means of diagnosis than the plate method with which, however, it should be combined. This assertion has been hotly disputed, especially by Ali Cohen, who maintains, in the first place, that no reaction is obtained if the mineral acids employed are pure, and that it is due to the presence of HNO_2; and in the second place, that other bacilli, and especially Prior-Finkler's, give the same reaction; that the intensity of the reaction varies with the remoteness of the generation from the fresh stools; and that it is at the best a quantitive and uncertain means of diagnosis, and is of no value

without waiting for the characteristic growth. Salkowski is of opinion that the reaction is no other than that which takes place when Indol is treated with nitric acid, and that the reason why it occurs when cholera cultures are treated with pure sulphuric or hydrochloric acids, is that the cholera bacilli produce HNO_2, which appears as nitrites in the solution. Cunningham's discovery that there are several distinct species of comma-bacillus, and that they differ from each other in the intensity of the reaction observed, in the shade produced, and in the age of the cultivation at which it may appear, would account for the different results obtained by these observers, and materially discounts any value which might be attached to the observation. As many as forty years ago, Virchow found that on treating the filtrate of cholera dejections with hydrochloric acid a distinct red colour was produced, and we last year pointed out that the same reaction could be obtained in the first urine passed by cholera patients which with the presence of albumen and the diminution or absence of chlorides, formed a triple character peculiar to cholera.

Viability of the Comma-Bacillus.—Professor Sirena, of Palermo, confirms generally the results of Dr. D. D. Cunningham's investigations as regards the survival of the comma-bacillus in water. (*Vide* the "Medical Annual" for 1890.) He finds that in drinking, or spring water, it dies in from five to eight days, and in well water in from twenty-four hours to six days. In water from the river Oreto, it lives for only two or three days, but in the same or other water sterilised, it preserves its vitality for over three months. In sea water it lives on an average till the fourth day, while in sea water rendered impure by admixture of sewage it survives only from twenty-four to forty-eight hours. Its duration in water, or liquid, or moist substances seems to depend on the presence of the saprophytes or other antagonistic microbes which are found there. The richer these substances are in putrifactive microbes, the sooner do the comma-bacilli disappear. Professor Sirena finds that the chemical composition of water has no effect on the vitality of the commas, while low temperatures render them torpid, but do not destroy them.

Its viability in milk has also been studied. Dr. L. Heine, of the German Imperial Health Department, has been led by his experiments to the following results. In non-sterilised new milk "the germs of the cholera bacillus" remain as long as the milk has not become very acid. A somewhat higher temperature, which accelerates the acidity, accelerates the destruction of the cholera bacilli. Occasionally they can be seen for two or three days even in acid milk; their extreme vitality was six days. In butter they could in favourable circum-

stances live a month, but in butter which had become caseous, and in cheese curds, they could barely live a day.

Cunningham finds that Calcutta milk in its natural state contains a variety of schizomycete organisms, principally a large micrococcus, a short oval bacillus, and a longer and more slender bacillus. These undergo rapid growth and multiplication with which is associated a process of acid fermentation and coagulation of the caseine, which is completed within twenty-four hours. When the comma-bacillus is added to milk the development of these common micro-organisms and the acid fermentation they set up, militate against the multiplication and vitality of the commas, and the medium is free of living specimens within twenty-four hours. When milk is boiled the organisms referred to are destroyed, and the acid fermentation and coagulation do not take place in the same way; but the spores of the bacillus subtilis may survive the process of boiling, and, the others having been killed, now undergo great and rapid multiplication, which is concurrent with a feebler acidity, and a finely pulverulent coagulation. When added to boiled milk the comma-bacillus multiplies freely, but if the spores of the bacillus subtilis have not been destroyed by too prolonged boiling, these after a time, by their growth and multiplication, either check or choke the commas. In absolutely sterilised milk, of course, in the absence of any struggle for existence, rapid development takes place. Dr. Cunningham's conclusion is that the milk in ordinary use in the bazaars and European houses in Calcutta, is not a favourable medium for the multiplication, or even continued existence, of comma-bacilli. (Part V., "Scientific Memoirs by Medical Officers of the Army of India.")

TREATMENT.—The discovery of the property of **Salol** to prevent the development of the alkaloidal poison by comma-bacilli in pancreatised solutions, which was attributed to Loewenthal, has been claimed by Hueppe, and it was eagerly seized upon in India as the basis of a new treatment. Surg.-Major Nicholson, of Patna, was the first to publish the results. He used salol in 15 grain doses suspended in an ounce of water, to which a drachm of mucilage and ℥xx of chloric ether were added, and repeated the dose in three or four hours according to the urgency of the case. Symptoms of amelioration began to appear after three or four doses, namely lessening of the urgency of the purging and vomiting, and a slow and gradual return of the pulse. The pulse usually became perceptible within twenty-four hours, and in ten out of the eighteen cases the character of the stools altered within forty-eight hours. In three cases in which the treatment was begun in the first stage, this change took place

within twenty-four hours. Usually the secretion of urine was established immediately after the character of the motions altered. All the eighteen patients recovered, although eleven were in the collapsed stage when the treatment began. On the appearance of reaction and improvement in the stools, soda bicarb. gr. x., æther chlor. ℥xx., sp. æth. nitros ℥xx., in a drachm of water, were given every four hours in some cases. In no case was the reaction severe, or accompanied by fever or signs of uræmia.

Simultaneously and independently **Salol** was tried by Surgeon Hehir, of Hyderabad. During 1889 eighty-eight cases of cholera came directly under Dr. Hehir's treatment, of which seventy-seven were treated with perchloride of mercury with a mortality of 44·7 per cent The last eleven cases of the epidemic were treated with salol, and all recovered. He gave 10 grains of salol with ℥xv. of sp. chlorof. every two hours. The maximum quantity given to any one patient was 90 grains, and the minimum 40 grains. He noted the shortening of the period of convalescence, and the absence of uræmic symptoms, as apparently marking the effect of the treatment, but withholds a positive opinion as to the part the drug is destined to play in the treatment of cholera, on account of the well known natural tendency of cases occurring at the end of an epidemic to recovery under almost any treatment.

On the other hand, Surgeon Stevenson and Surgeon-Major Tomes, report, the former four, and the latter seventeen cases of cholera, which were treated exactly in the way described by Dr. Nicholson, with a mortality of 66 per cent. ; the usual course of the disease being apparently uninfluenced by the drug ; and in one Calcutta Hospital the mortality of the cases so treated has been 100 per cent. ; and this treatment has been so unsuccessful in another, that its employment has been abandoned. We understand that in Dr. Nicholson's own hands, an extended experience has resulted in a mortality of 29 per cent., a figure which is not unprecedented under a purely expectant treatment.

Surgeon E. H. Brown employed **Eucalyptol**, to the exclusion of every other drug, in an epidemic at Julna in the Deccan, with a mortality of 25 per cent. in the lines of the 2nd Infantry H. C. (eight cases), and of 19 per cent. in the bazaar (sixty-three cases). The dose was, for adults, 5 minims ; and for children, from ½ a minim upwards, in a little milk, at first every fifteen minutes for one hour, and then hourly.

Surgeon-Major Ross, of Rawul Pindi, recommends that the treatment should begin with an attempt to neutralise the injurious effects

of the poison already circulating in the blood, by an hypodermic injection of **Atropia** and **Morphia**: atropia on the ground that it is an antidote to muscarin, which produces toxic symptoms similar to those of cholera; morphia to check the vomiting and thus allow intestinal disinfectants to pass the pylorus. The second indication is to remove the microbes and the poisons they have formed in the intestines. The microbe (we presume he means the comma-bacillus of Koch), can only live in an alkaline soil, and the best disinfectants are therefore either acids themselves or such as have an acid reaction: as **Phenol** combined with **Sulphuric Acid** to neutralise to some extent the poisonous effects of the carbolic acid; or **Aseptol,** or **Salol,** which splits up into carbolic and salicylic acids; or **Betol,** which divides into salicylic acid and betaphthol. These should be combined with **Gallic Acid** (or catechu,) on account of its forming an insoluble compound with albumen, thus rendering the poisonous alkaloids less soluble. The third and final indication is to starve out the bacilli by denying the patient all nutriment, especially soup, in which they are known to thrive and multiply freely, and restrict him exclusively to rice water and ice. By this treatment Dr. Ross had a mortality of only nineteen in about one hundred cases in 1888-89.

REFERENCES.—Cunningham, "Indian Med. Gaz.," May, 1890; Dowdeswell, "Lancet," 28 June, 1890; "Centralblatt für Bakteriologie," III. Band. No. 6, and IV. Band. No. 6 for 1888; Sirena, "Lancet," March 1, 1890; Heine, "Lancet," Sept. 14, 1889; Hehir, "Ind. Med. Gaz.," May, 1890; Brown, "Ind. Med. Gaz.," Dec. 1889; Ross, "Ind. Med. Gaz.," April, 1890.

Synopsis.—(Vol. 1889, p. 42.) **Geranium Maculatum,** grs. x to xl, given also as rectal injection.

(Vol. 1890, p. 199.) **Opium** is used in full doses (40 to 60 minims of tincture) in the premonitory diarrhœa and early stages only. In the algid stage, a mixture of Sp. Etheris, Sp. Ammon. Aromat. and Tinct. Lavand. Co. is given frequently. Some still use **Calomel** in heroic doses. A combination of **Carbolic Acid, Bismuth** and **Belladonna** is sometimes useful. To establish the urinary secretion in the third stage, **Hot Fomentations** over kidneys, **Diluents,** and perhaps **Sp. Ether. Nit.,** with continued stimulation, are resorted to. **Strophanthus** has been used in the third stage. Injection of $\frac{1}{8}$ gr. **Perchloride of Mercury** deeply into gluteal muscles was successfully used in one case. A pill containing **Cannabis Indica,** gr. ss, and **Calomel,** gr. j or ij at intervals of an hour, and followed by **Turpentine** and **Cannabis Indica** internally, has been recommended to restore renal functions; (probably drugs in pill form are of little or no use in cholera). **Salol** has been proposed as an antidote to the cholera poison.

CHOREA.

Graeme M. Hammond, M.D., New York.

Dr. C. L. Dana reports in the "New York Med. Jour.," Oct. 19th, 1889, the pathological findings in the following case of chorea. The

patient, eighteen years of age, had had chorea for twelve years. The chorea was complicated with epilepsy. He was emaciated and anæmic, face dull, expression stupid, and his speech was slow and jerky on account of the movements of his tongue and lips. Over his left parietal bone there was a hole made by a trephining operation performed fourteen months before Dr. Dana saw him. There was no heart murmur, the lungs and abdominal viscera were healthy and the urine was normal. The patient died from pneumonia. The autopsy showed that the skull was brachycephalic in shape and was extremely thick, measuring seven-eights of an inch in thickness through the occipital bone. The dura mater was adherent, the pia was thickened and congested but not adherent. The brain looked normal except for a very superficial softening on the under surface of the temporal lobes. The cord was normal. The brain was hardened in Müller's fluid and the sections taken from it were stained after Hugert's method. The examination of these sections showed there was a slight degree of leptomeningitis. The white matter just below the cortex was honeycombed with little spaces, round, oval, or like long slits. These spaces were either empty or else partly filled by blood-vessels. The walls of the blood-vessels were somewhat thickened. They had, however, been tensely distended, and exudates, including red blood-cells had been poured out; this had distended and eroded the circumvascular spaces forming large dilatations. This process could only be explained by assuming a flabbiness and loss of tonus of the vessel-walls due to prolonged distension. The nasal ganglia and internal capsule did not appear as much involved as the subcortical tissue. The small arterioles had formed varicose dilatations, which were full of blood. The fibres of the internal capsule were split up by interlacing and dilated blood-vessels, whose walls were thin, disintegrated, and ready to drop to pieces. Varicosities of the nerve-fibres were found. The corpora quadrigemina were dotted and streaked with dilated capillaries, but showed no circumvascular spaces. In the crura cerebri, at the level of the third nerve, there was less vascularity. In the pons the nucleus and nerves of the fourth pair contained few cells and some of these were degenerated. The gray matter of the floor of the fourth ventricle was much honey-combed with cavities made by dilated vessels. To sum up, there was diffuse and varicose dilatation of the small arteries. The severest changes—vascular, interstitial, and degenerative, were in the lower surface of the temporal lobes, the internal capsule, and corpus striatum, especially in the lenticular nucleus and in the optic thalamus. There were at least two things, concludes the author, which would determine chorea—the existence of an abnormal state of the blood, and

an intense cerebral hyperæmia in certain localities of the brain. If a neurotic child, with a tendency to rheumatism, receives a fright or a fall there supervenes a vaso-motor paralysis of the motor tracts. The blood if impoverished or rheumatically tainted increases the irritation, and the vascular tonus is gradually lost and a permanent hyperæmia of the parts follows.

Dr. M. Allen Starr favours the infectious theory of chorea. It is well known that a neurotic person, in a condition of bad blood, is very susceptible to infection by germs. He cited three well authenticated cases in which micro-organisms had been discovered.

Dr. Mary Putnam Jacobi draws attention to two autopsies reported in England. In one of these there was a diffused pink colour throughout the nerve tissue not associated with congestion or dilatation of the vessels; in the other there were thrombi, focal hæmorrhages, and vascular dilatations in the cord. One reason which might be urged against the infectious origin of the disease was its frequent result from mental shock.

Dr. W. R. Birdsall asks: Are these pathological findings the cause, or the result of deranged action in nerve centres? Similar changes were found in epilepsy and in other convulsive disorders.

Treatment.—Dr. E. C. Seguin, in his lectures on the "Treatment of Neuroses," gives the following rules for the treatment of chorea: (*a*,) Our mainstay in the treatment of this affection is **Arsenic.** It is necessary in most cases to go beyond 15 drops three times a day of **Fowler's Solution;** in some cases when a dose of 10 or 12 drops three times a day is reached, gastro-intestinal disturbances and redness of the eyes are apt to appear and necessitate a cessation of treatment for two or three days. After this interval of rest you can and should begin again *with the dose at which you left off,* and then go on to the really efficacious doses of from 18 to 25 or even 27 drops after each meal. The dose of arsenic should be freely diluted by giving it in a large tumblerful of alkaline water, "still" or effervescent, and should be taken in divided drinks during the hour following the meal; (*b*,) Rest is a most important factor in the treatment of chorea, especially in its chronic and relapsing forms. The patient must not be allowed to play or read in bed, but should be amused by other persons. Nor should several members of the family (especially other children) be allowed in the room at the same time. When the choreic movements have ceased, the arsenic should be stopped at once, rather than gradually, but release from rest should be done only in the most cautious manner. If the patient is anæmic, **Iron, Cold Sponging,** followed by hard rubbing (not massage) will be beneficient. Those with weak hearts need

Digitalis or **Strophanthus** as an adjuvant to the arsenic. **Bromides** are contra-indicated and injurious except in cases where great sexual excitement exists. Circumcision and treatment of vulvar diseases may be necessary. Eye-strain is sometimes an accessory or secondary cause of much importance, and every choreic person should be tested for defects, and, if found, should be corrected : (*c.*) In the ordinary sense of the word exercise is not good for choreic children, but during convalescence, the practice of a few gymnastic movements, under a teacher's or parent's guidance, and with no one else present, may prove of advantage. The movements they should practice are : (1,) Deep inspiratory acts with simultaneous outstretching of the arms to the fullest extent,—from four to ten such inspirations are enough for one *séance;* (2,) Forward and backward movements of the arms ; (3,) Stooping forward so as to touch the toes with the finger tips ; (4,) Rising from a squatting posture. *Every movement should be done with force and completely finished.* A *séance* of five minutes twice a day is long enough, and a few minutes of rest should follow. Indian clubs should not be used; (*d,*) The proplylaxis of chorea after a first attack may be accomplished by a proper hygiene, including sufficient animal and fatty food. If the child have defective eyes they should be re-examined before the beginning of every school-year.

Dr. Alt reports two cases of chorea treated by **Chloralamide.** The first case was that of a boy, eleven years of age, who, after five days treatment with 15 grains of chloralamide, given three times a day, was almost absolutely cured. The second case was that of a girl who was unsuccessfully treated by arsenic for fourteen weeks. She was cured after eight days' use of chloralamide.

References.—"New York Med. Journ.," Oct. 19, 1889 ; Ibid., April 12, 1890 ; "Therap. Gaz.," p. 745, Nov.. 1889.

Henry Dwight Chapin, M.D., New York.

Dr. J. A. Jeffries has used **Sulphonal** in chorea. Five of the cases were simple chorea, of recent origin, and all recovered within three weeks. In two cases arsenic had failed, and in two it was never used ; in the fifth case, either arsenic or sulphonal alone failed, but together they were quickly followed by improvement. All cases were ordered a daily sponge-bath, simple diet, and sleep in the middle of the day.

Dr. Reiss recommends subcutaneous injections of **Sulphate of Eserine** for chorea, dose, 00·1 gr. twice daily. He claims to have effected a cure in many cases after five or six days of treatment, although in acute cases of chorea in adults success was not so brilliant.

REFERENCES.—"Med. News," vol. lvi., p. 275; "Pharm. Jour. and Transact.," No. 2, March, 1889.

Synopsis.—(Vol. 1889, p. 200.) **Antipyrin, Antifebrin,** recommended by Chapin. Dana deprecates their use, and also **Physostigmine, Salicylates,** and **Actæa Racemosa.**

(Vol. 1890, p. 201.) **Chloral,** in large doses, to secure prolonged sleep, is recommended.

COLOTOMY (Lumbar and Inguinal). (See also "Intestinal Surgery.")

Herbert W. Allingham, F.R.C.S.

In the "Medical Annual," for last year, the present writer set forth what he considered to be the main advantages of the inguinal over the lumbar operation, viz., its easier performance, the attainment of a better spur, the more convenient position of the artificial anus, and the more rapid recovery. Stress was laid on the importance of purposely making a good spur, for otherwise the passage of fæces into the lower part of the rectum might defeat the objects of the operator. A description was also given of a supplementary operation (to be applied only in cases of non-malignant strictures) when a distressing procidentia of the gut had followed upon the colotomy. The chief points of this were to pull out part of the gut, make the mesentery taut, apply a spiked clamp to the bunch of outdrawn and outlying intestine, and finally remove all portions of gut above the clamp.

In his Bradshawe lecture, before the Royal College of Surgeons, Mr. Bryant has fully discussed and weighed the respective merits of lumbar colotomy and of what he terms iliac colotomy, paying much attention to the arguments set forth by Mr. Harrison Cripps and by the present writer. Lumbar colotomy was pronounced to be the better and safer operation.

Mr. Lamminan, of Tunbridge Wells, has performed with success the writer's modification of Littré's method, but thinks that the two apertures should be made of equal size.

Dr. Purcell and Mr. Jessett have published accounts of their "Novel Method of Inguinal Colotomy." The incision which is made through the skin is semi-lunar and the muscles are cut down in a straight line; hence a valvular kind of flap is formed downwards to somewhat cover the artificial anus and form an artificial sphincter. The upper opening is carefully sutured to the edge of the abdominal wound; the lower end after being sutured is invaginated and returned; a spur of intestine about three inches long is left protruding from the wound and is carefully packed with gauze, padded with wool, and bandaged. Four or five days afterwards the spur may be cut away on a level with the skin. As the diseased portion of bowel in the rectum is completely shut off from the upper segment, fæces cannot leak over the ulcerated

surface. Since the lower portion of bowel is invaginated and returned into the abdominal cavity, there can be no prolapse of the mucous membrane from it, and there is little fear of prolapse from the upper portion of intestine as it is divided so closely to its origin.

REFERENCES.—"Lancet," Dec. 14, 1889; Ibid., Nov. 30, 1889; "Brit. Med. Jour.," Dec. 7, 1889; Ibid., April 27, 1889.

CONJUNCTIVITIS.

Synopsis.—(Vol. 1890, p. 205.) Subdue inflammation by cold compresses and astringents, *e.g.*, **Sulphate of Zinc Lotion**, gr. j to 5j, using compresses to allay the subsequent irritation. Smear the edges of the lids with **Vaseline**, or, better, **Vaseline** with **Benzoated Lard**. When conjunctiva is much swollen, and in folds, use antiseptics, such as a dilute solution of **Permanganate of Potash**, dropped into conjunctival sac every one, two, or three hours. The granulations may also be cauterized with a solution of **Nitrate of Silver**, increased from 0·5% to 1 or 2% strength, washing out the eye with warm water after each cauterization. Cease cauterization if ciliary pains arise. If conjunctiva remains in a spongy condition, use solid **Sulphate of Copper**.

For *Diphtheritic Conjunctivitis.*—Blanch washes the eyes with saturated solution of **Boric Acid**, removes as much of the false membrane as possible with forceps, and rubs the everted lids with a cloth wetted with **Citric** or **Lactic Acid**, using antiseptic **Helenin** finally, to avoid reproduction of the false membrane. He avoids moist warmth.

CONSTIPATION (Persistent). *Herbert W. Allingham, F.R.C.S.*

The usual medical treatment is generally sufficient to cure ordinary constipation, but before purgatives can relieve persistent constipation, the colon must often be cleared of its poisonous contents by mechanical means.

What are the Causes of Persistent Constipation?—Spasm with hypertrophy of the sphincters may be reckoned as a cause; it may itself have been occasioned by a temporary attack of constipation, and then remain and make the constipation persistent.

Another great cause may be a congenital narrowness of the anal orifice, which has been too small to be noticed at birth, and is only observed together with its effects, when the child has passed its infancy. In the feeble, and particularly in the old, this constipation may result from atony of the muscular tissue and of the bowels combined with loss of muscular sense. Mention may also be made of intussusception of the rectum, malformations of the uterus, or enlarged prostate. These may have no other symptoms than the constipation, and if the patient is silent as to the latter the presence of the former may be masked. Polypus, fissure, piles, malignant disease or stricture of the rectum may also have constipation as one out of their many results. Therefore, for the cure of persistent constipation, the anus and rectum must be thoroughly examined, and the colon and rectum be thoroughly cleared out by

copious enemata; for if any of the above causes are present but are undiscovered, the administration of purgatives for years will fail to give a permanent cure.

For persistent constipation complicated with spasm with hypertrophy of the sphincters, the best procedure is forcible dilatation of the anus under an anæsthetic. The passage of bougies, which are daily increased in size, may do good in less serious cases, or relieve patients who refuse the stronger but more thorough measure. But this forcible dilatation, or a division of the sphincters, is the only satisfactory remedy for the condition proceeding from congenital narrowness of the anus. For atony, galvanism may be of use; massage, too, has been found to be of service; and abdominal belts may benefit women who have borne several children. It goes without saying that constipation resulting from the graver causes mentioned above can only be alleviated by their removal or mitigation.

Synopsis.—(Vol. 1889, p. 204.) **Injections of Glycerine**, ʒij; one-third part water may be added to the injection.

(Vol. 1889, p. 207.) In children.—**Glycer. Inject.** gtt. xl to lx; **Soap and Water Enemata** (Oss.), ℞ Tr. Nux Vom. ♏ss, Tr. Belladonna, ♏x, Infus. Sennæ, ♏xx, Infus. Calumbæ, ad ʒj. M. Ft. Haust. t.d. præ cib. reduced to once daily. **Ext. Cascar**, gtt. xx, with **Tr. Belladonna**, gtt. x in a little **Glycerine. Sulphur**, gr. ss, coloured with **Cochineal**. If motions are hard, ℞ Sod. Sulph., grs. v to x, Quin. Sulph., gr. ¼, Tr. Nux Vom. ♏ss, Ac. Sulph. Arom. ♏j, Aq. ad ʒj. M. Ft. Haust. t.d. s. for a baby six months old. If food irritates mechanically, or ptomaines and poisonous gases form, **Calomel** ⅛ gr. doses with **Sod. Bicarb.** in a little sugar is the best remedy, repeating it half-hourly until ½ or j grain is taken; this will also be useful if hard balls of pale fæces are voided, or when there is peevishness and anorexia with or without fever, also in pleurisy, pneumonias, diphtheria or helminthiasis.

(Vol. 1890, p. 206.) **Glycerine Enemata** especially suited to constipation of pregnancy, and in infantile constipation. **Glycerine Suppositories** cause no burning, but act more slowly than the enemata. A piece of **Cotton Wool** as large as a hazel nut, well saturated with **Glycerine** and used as a suppository is very effectual. **Electricity**, using a mild galvanic current, with the negative electrode passed well within the sphincter is often useful, and the Faradic current may be used to strengthen abdominal muscles at the same time. **Massage** is often very serviceable. If constipation be accompanied by spasm and hypertrophy of the sphincter, the anus must be forcibly dilated under an anæsthetic, or **Bougies** used. Congenital narrowness of the anus must be treated by forcible dilatation or division of the sphincters. An abdominal belt may materially assist women whose abdominal walls are low and pendulous.

CONVULSIONS (in Children).

Synopsis.—(Vol. 1889, p. 210.) ℞ Tinct. of Musk, Tinct. of Castoreum, Sulphuric Ether, āā ♏xxxij, Paregoric, ♏viij. M. Six drops given hourly in a teaspoonful of sugared water or milk. In infantile convulsions, **Urethan**, ʒj or more; also, **Solanin**, gr. j t.d. in convulsive attacks. In traumatic tetanus, **Bromide of Conine**, gr. $\frac{1}{72}$ to ⅛ (Duncan).

(Vol. 1890, p. 209.) When due to dentition, falls on the head, meningitis, and acute tuberculosis, **Sulphide of Calcium**, 1 gr. in half a pint of water and a teaspoonful of this solution given hourly. **Antipyrin** may be alternated with this in ½ to 2 gr. doses.

CORNEA. *W. Lang, F.R.C.S*

Fluorescein, one of the coal tar products, has been introduced as an agent for demonstrating the existence of corneal ulcers. Ten grains of the powder and 15 grains of **Bicarbonate of Soda** dissolved in an ounce of **Water** form a solution, of which a small drop placed in the eye instantly stains the cornea an intense yellowish green colour wherever the epithelium is absent. A foreign body imbedded in the cornea is at once rendered visible, however minute it may be, by a ring of yellow stain which surrounds it and shows it up. In children it is especially useful where the presence of an ulcer is suspected, but the photophobia renders the examination somewhat difficult. It is, however, most useful in delimiting hypopion ulcers, especially where the hypopion is large and forms a back-ground to the ulcer. In such cases the stain defines the ulcerated area in the most brilliant manner, and enables the surgeon to destroy the growing margins of the ulcer with the greatest certainty, by means of the galvano-cautery. Again, in dendritic ulcers the peculiarly irregular course of the ulceration is equally well defined and readily destroyed by the cautery.

Synopsis.—(Vol. 1889, p. 212.) Peroxide of Hydrogen for rodent corneal ulcers.

CORNEA (Conical).

Synopsis.—(Vol. 1890, p. 210.) Clear glass shells of the same curve as the natural cornea have been used, and with the aid of **Cocaine** may be kept on some hours. Tattooing the summit of the cone has improved vision and prevented increase of the deformity.

CORNS.

Synopsis.—(Vol. 1890, p. 210.) Subplantar corns may be treated by painting a ring of **Glycerine Jelly** around them, allowing it to dry, and then fitting a circular piece of the strongest **Salicylic Plaster** within the ring and painting over the whole with two or three coats of **Jelly**, and when these are almost dry, a layer of **Cotton Wool** is placed over them and pressed on. The dressing is changed once or twice a week.

CORYZA. (See also "Euphrasia," p. 28.)

Synopsis.—(Vol. 1889, p. 34.) **Concillana Bark** in acute or chronic nasal catarrh locally applied.

COXITIS (Senile).

Synopsis.—(Vol. 1890, p. 211.) Some cases are relieved by counter-traction by means of a long splint with a stirrup and weight. This is used for about a month or six weeks, after which a supporting splint allowing of some locomotion is applied.

CROUP.

Synopsis.—(Vol. 1889, p. 34.) **Concillana Bark**, grs. v. indicated in membranous croup.

(Vol. 1890, p. 211.) **Mercurial Vapour** is recommended by Rothe. A tent is fixed over the bed, in which 30 grs. of **Calomel** is vaporised on a metal plate over a spirit lamp, repeating the inhalation every two or three hours (with smaller doses of Calomel), and also whenever a severe attack of dyspnœa comes on. **Turpentine** has also been used, a teaspoonful being given at first, and this may be repeated more than once at intervals. When the patient begins to recover, a mixture of **Turpentine** and **Mucilage** is used. In one case a spray consisting of Turpentine 4 parts, Carbolic Acid 4 parts, Alcohol 3000 parts, and Water 1000 parts, was used with the best results.

CYSTITIS.

R. Milne Murray, M.B., F.R.C.P.

Dr. More Madden has found that marked relief in chronic cases of cystitis has followed forcible dilatation of the urethra, and the induction by this means of temporary incontinence of urine, accompanied by free application of **Glycerine** and **Carbolic Acid** to the mucous membrane. The pain resulting from this can be relieved by **Cocaine.** Two or three applications at intervals of ten days may be required.

Dr. T. Parvin has obtained good results in two cases of cystitis from the injection of a 2 per cent. solution of **Creolin.** In one case much pain and in the other none followed, but both made excellent recoveries.

Synopsis.—(Vol. 1889, p. 215.) *Chronic Purulent Cystitis:* R Acid Borac. ʒij Potass. Nitrate ʒss, div. in tales viij, one daily in a pint of Infusion **Uva Ursi**—say, a small teacupful every two hours. **Creolin**, ½% solution as injection in chronic cystitis; **Resorcin** injection, 2 to 15% in gonorrhœal cystitis—two or three days between each injection. *For Irritable Bladder:* Lukewarm water with **Tinct. Opii, Cocaine**, ¼%, **Resorcin**, ½%, **Carbolic Acid**, ⅛%; If urine is ammoniacal, **Sol. Potass. Permang.** ,,$\frac{1}{10}$% or **Amyl Nitrite**, gtt. iij to Aq. Oj are useful. **Kava-Kava**, R Ext. Kav. Depur., grs. xlv, Sacch. Alb., grs. ccc. M. Ft. Pulv. Divid. in parts x. Pulv. j, 3tis hor. quiets the vesical nerves, but is not curative (p. 50). **Pichi Fl. Ext.** gtt. xv to ʒj (p. 62).

(Vol. 1890, p. 213.) Lavaux's method of washing out the bladder without catheter in painful cystitis, using a rubber tube with a guarded nozzle to conduct the medicated solution from a graduated reservoir, which is placed about one and a half metres above the patient, who lies on his back. The fluid is first placed in the reservoir, and the air being forced out of the tube, it is introduced with the guarded nozzle into the urethra, and is removed when sufficient fluid is passed into the bladder to produce a desire to urinate, and when the patient has emptied his bladder, the tube is again introduced. A saturated solution of **Boracic Acid** is usually used first, and in very obstinate cases, a solution of **Nitrate of Silver.** If pain is excessive, a 4% solution of **Cocaine** is thrown in and allowed to remain from three to five minutes. The temperature of the injected fluids should be from 100° to 104° Fah. when placed in the reservoir.

For cystitis in women, dilate the urethra rapidly and swab out the vesical

neck with pledgets of **Glycerine Carbolate**, B.P., relieving the pains by 10% **Cocaine** solution; two or three applications at intervals of a week may be used.

In tuberculosis of the bladder, **Free Scraping** and **Drainage** have given good results.

DEFORMITIES. (See "Orthopædics.")

DERMATITIS HERPETIFORMIS.

Synopsis.—(Vol. 1889, p. 215.) **Grindelia Robusta**, Fl. Ext. ℥j to Aq. ℥iv or vj, locally. For burns, **Cocaine Hydrochlorate**, 5% solution (Anderson).

(Vol. 1890, p. 215.) **Soda Arseniate** in moderate doses at first, and then pushed to extreme limits. If fever is present, give **Hydrobromate of Quinine**. *Locally*, if pain is severe, open the bullæ with an aseptic needle, and use **Boric Acid** lotions, or antipruriginous ones of **Carbolic Acid** or of **Corrosive Sublimate**. **Dusting** with **Dry Powder** is sometimes best.

DIABETES. *Robert Saundby, M.D., F.R.C.P.*

Pavy opened a discussion on this subject at the Berlin Congress. He said that the disease was due to failure of the liver to arrest the carbo-hydrates and their passage into the circulation. In the majority of cases in which the disease sets in after middle life this condition may be controlled by a diet from which carbo-hydrates are eliminated. Opium and its derivatives, codeine and morphine, are the medicinal agents by which the actual cure of the disease may be accomplished after the excretion of sugar has been reduced to a minimum by diet. After a time a fair amount of carbo-hydrates may be taken without leading to the elimination of sugar. "Soya" bread is the latest addition to the dietary of the diabetic. It is made from the meal of a bean called the "soya hispida," a native of China and Japan, and according to the "Lancet," it contains only 2·72 per cent. of starch, which is far superior to the best gluten bread. Messrs. Van Abbot & Sons supply soya flour, biscuits and bread.

DIABETES INSIPIDUS.—Opitz asserts that he administered **Antipyrin** to three cases of diabetes insipidus with immediate results, as all the symptoms at once disappeared. Two of the cases were very severe. The initial dose should be 30 grains daily, increasing 15 grains each day until 90 grains are being given, or the good effect has appeared. After eight days stop the medicine, in order to observe if the good effects remain.

(Vol. 1889, p. 216.) **Antipyrin**, **Salicylates**, and **Opium** in diabetic sciatica; **Antipyrin** and **Morphia** for erythema and œdema of feet: **Opium** and its **Alkaloids**, **Codeine**, and **Morphine**; The **Carlsbad** cure (not permanent); **Jambul Seed**, grs. v every four hours; **Syzygium Jambolanum Bark** has been used in 10% solution, about ℥x being taken in 2 days; **Antipyrin**, ℥ss to jss doses daily; ℞ Potass. Permang., grs. xx, Aq. ℥i, M. Sig. v drops

4 times a day in Bordeaux wine; ℞ Menthol, grs. xv, Cocaine, grs. v, Chloral Hydrat., grs. iij, Vaseline, ʒj, M. pomade for neuralgia. For pruritus pudendi, when there is no eczema or local abrasion, **Peppermint Water** made by putting a teaspoonful of borax into a pint bottle of hot water, adding v drops of Ol. Menth. Pip. and shaking well; then bathe the parts with a soft sponge; when rawness or eczema is present use **Olive Oil** with **Iodoform**, grs. v. to the ounce.

(Vol. 1890, p. 216.) **Opium** and **Alkalies** with appropriate diet. **Alkaline Mineral Waters**; Vals, Vichy, or Contrexéville is advised; they may be used with the juice of a lemon or a little claret. **Jambul** has done good in some cases. **Antipyrin** controls the formation of sugar to some extent.

DIARRHŒA (Infantile). *Henry Dwight Chapin, M.D., New York.*

Dr. Luff considers that the principal share of the blame in acute infantile diarrhœa rests with the milk or cheese ptomaïne—tyrotoxicon—produced during the fermentation of milk under certain conditions. Carbolic acid, creasote, resorcin, salicylic acid, salicylate of soda, naphthol and salol have been given in the hope of checking the putrefactive changes in the bowels. Ringer has recommended the administration of a weak solution of **Bichloride of Mercury** in infantile diarrhœa attended with very slimy stools. Dr. Luff refers to Illingworth's antiseptic treatment of infantile diarrhœa, which he had himself found most useful, and the employment of which had first directed his attention to the treatment he had employed. This consists in drug treatment and diet treatment combined. The drug treatment consists in the administration of $\frac{1}{60}$ grain doses of the **Biniodide of Mercury** dissolved in **Iodide of Potassium**, combined with 1-grain doses of **Chloral Hydrate**. It can be shown experimentally that the soluble biniodide of mercury is an extremely soluble and diffusible salt, and that it possesses the property of combining with and rendering insoluble the milk ptomaïne—tyrotoxicon. As regards the diffusibility of the biniodide of mercury, Dr. Luff has detected it in the urine within two hours of its administration. He has never found that the soluble biniodide of mercury itself acts as an intestinal irritant. Of eighty cases of acute infantile diarrhœa treated by this method, the diarrhœa ceased within two days in seventy-two of the cases; in five of the remaining eight cases it ceased within four days, and in no case did it last over seven days.

Dr. E. M. Sympson employs **Glycerine of Borax** in infantile diarrhœa due to the excessive fermentation of food in the intestinal canal. It acts as an antiseptic to prevent excessive fermentation in the stomach and intestines, and soothes the mucous membrane in passing over it. The children like this preparation; it lessens the griping pains, renders sweet the offensive motions, and stops the diarrhœa.

It is used as follows :—

℞ Glycerine of Borax ♏xx | Distilled water to ℥j.
Tincture of Orange ♏iij |

Sig. To be given every one, two, or three hours, according to the severity of the case or the age of the patient.

Dr. Estival states that first of all efforts must be made to prevent the penetration of germs into the digestive tubes of the infant. The careful washing of the nurse's teat with antiseptic solutions, and the same of the nursing bottles, only in stronger solution, and sterilization of the milk used, is already a regular practice, and washing out the baby's mouth each time it nurses is another good habit. The treatment itself must attempt to destroy the pathogenic germs which are the cause of the malady. Two drugs are used, **Naphthaline** and **Calomel.** The first must be given in a mixture that does not contain any fatty matters. The following formula is given :—

℞ Naphthaline (pure) 1 grm. | Chamomile-flower water, āā 40 grm.
Mucilago Acaciæ

M. Sig. Give a teaspoonful every two hours (shake well).

Or it may be given in rectal injection as follows :—

℞ Naphthaline 1 grm. | Aqua Destill. 50 to 100 grm.

Boil this until it looks milky, and add boiling chamomile-flower water, 500 to 1000 grammes. Stir well, and allow it to cool down to 37° C. (98½° F.).

To prevent the administration of naphthaline causing any poisonous accidents, no substances must be allowed to remain in the intestines that can dissolve it (fats mostly).

According to the recent experiments of Baginsky, when calomel and naphthaline are given together all the bacteria that resist the first are destroyed by the second, throughout the whole intestinal tract.

Dr. Geo. B. Fowler in artificial infant feeding strongly favours common-sense success against theoretical procedures based upon the microscopic examination of fæces and bacterial cultures. The latter have, as yet, added very little to our therapeutics as applied to internal medicine. His method of feeding is as follows: Put four tablespoonfuls of rice into three pints of water and boil half an hour; then set aside on back of range to simmer during the day, water being occasionally added by the cook to maintain the original three pints. At night strain through a colander and place on ice. When cold a paste is formed. Three tablespoonfuls of this paste are added to each nursing bottle (half pint) of milk, and fed during the next day, a fresh supply of rice-paste being under way in the meantime. Should there be constipation he uses farina, prepared in same way, and used in the same proportion. Rice is astringent, farina laxative. The

hydrated starch granules interpose themselves between the particles of casein and prevent the formation of solid clots. By this process we do not dilute the cow's milk, but, on the other hand, soften it and add a constituent, carbohydrate, in which, compared with mother's milk, it is weak. No fear may be had but that starch thus treated and administered will be digested by a child of three or even two months.

Dr. J. Michell Clark has used **Hydronaphthol** in diarrhœa. To accomplish antisepsis in the intestine, we must make use of a substance which is both antiseptic and practically insoluble, so that it may pass through the alimentary canal unchanged, and exert its antiseptic action at every part of it, and at the same time be incapable of absorption into the blood, or if absorbed be harmless. Hydronaphthol is prepared from beta-naphthol, is less soluble in water, melts at a lower temperature, and its solution gives a deep yellow-brown instead of the green colour with the tincture of the chloride of iron. It is said to be absolutely innocuous. As to the dose, 2 to 3 grains every two hours is sufficient; in diarrhœa, after the first three to six doses it may be given every three or four hours, provided the effect is maintained. For children under one year the dose is ½ grain; to older children ½ grain to 1 grain every hour or every two hours, or less often, according to circumstances. The remedy was employed in enteric fever, as well as diarrhœa.

Dr. Hayem speaks of the utility of **Lactic Acid** in the treatment of the green diarrhœa of children as well as of the different forms of diarrhœa in adults. He prescribes lactic acid in the dose of 150 to 200 grains, in the form of a lemonade sweetened with syrup and dissolved in large quantities of water. In a certain number of cases Dr. Hayem restricted all alimentation to kéfir, and he states that in the last two years he has been administering this, together with lactic acid, to his phthisical patients affected with dyspeptic troubles, and he has found their diarrhœa is by these measures readily suppressed. Lactic acid seems to succeed less well in entero-colitis than in other intestinal affections, a fact which proves that it only reaches the large intestine in a diluted condition. The author has found, however, that it is especially successful in the diarrhœa of typhoid fever.

Dr. Worsham confirms the opinion of Dr. Aulde concerning the value of **Arsenite of Copper** in bowel complaints. A tablet of arsenite of copper, gr. $\frac{1}{10\,0}$, is dissolved in six ounces of water, with directions to give a teaspoonful every ten minutes for the first hour, and every hour thereafter.

REFERENCES.—"Lancet," Dec. 21, 1889; "Lancet," Oct. 12, 1889: 'Archiv. Pediatrics," April, 1890; "Med. Record," July 12, 1890:

"Practitioner," July, 1890 ; "La Méd. Moderne." July 3, 1890; "Therap. Gaz.," Jan., 1890.

Synopsis.—(Vol. 1889, p. 222.) **Naphthalin**, beginning with grs. ivss to xv daily, combined with **Alcohol, Tinct. of Opium**, and **Peppermint**, useful in chronic intestinal catarrh, cholera morbus in children and enteric fever ; **Salol** indicated by vomiting, purging, and cramps, also summer diarrhœas of children, and in dysentery, giving gr. ⅔ sec. hor. to a child of 2 years ; from 2 to 5 years grs. 1 ⅔ ; from 5 to 12 years grs. iij, and above this age grs. iv to v, continuing until the stools cease ; **Irrigation, Sterilization of Foods ; Geranium Maculatum**, grs. x to xl, and as rectal injection in diarrhœa, typhoid, cholera, and dysentery (p. 42); **Plantago Ispaghula Seeds** (p. 62).

(Vol. 1890. p. 217.) **Naphthalin** in doses of 0·5 grammes, four or five times a day for adults, and for children of from one to two years 0·12 to 0·18 grammes four times a day. The drug should not be given for longer than ten to fourteen days.

Small doses of **Iodoform** have arrested tubercular diarrhœa, and in similar cases **Lactic Acid**, in doses of 30 to 120 grs. daily, has sometimes proved useful.

Hill and Tropical Diarrhœa.

(Vol. 1890, p. 218.) **Peptonized Milk, Pepsine, Ingluvine**, and **Liquor Pancreaticus** after meals are useful. **Liq. Hydrarg. Perchlor.** in ℥ss doses, twice or three times a day, or in 10 minim doses every hour during part of the first day of treatment. An exclusively **Milk Diet** has been used, without drugs, giving 2 to 4 quarts of milk during twenty-four hours, and nothing else of any kind.

Diarrhœa and Indigestion of Children.

(Vol. 1890, p. 219). **Glycerine Injections**, several being used of ℥ij each. **Salicylate of Bismuth**, in mixture, 4 to 5 parts by weight to 100 parts of water, with 10 to 20 parts of glycerine, or better, in syrup or mucilage, with a little red wine, a dessertspoonful being given every two hours, or oftener if required in cases of flatulence, with great gaseous distension, or where the stools have a markedly offensive odour. In summer diarrhœa of infants, a full dose of **Castor Oil**, or if stomach be irritable, **Calomel**, removes bacteria from intestine, and this should be followed by thorough irrigation of the large intestine with sterilized warm water by means of a long tube introducing a quart of water at a time, and repeating the irrigation every three, four, or five hours, according to the case. **Salol** is especially indicated in the first stage of gastro-enteritis, and in the more chronic forms of entero-colitis accompanied by slimy, bad-smelling motions. For children under six months, **Salol**, gr. ss, every two hours, for three or four doses, is sufficient ; between six and eighteen months, ½ a gr. to 1½ ; at two years; 1½ to 2 grs. In chronic catarrh it is given in somewhat larger doses, before meals. ℞ Naphthalin 2·00 to 4·00 grammes, Sacchari alb. 2·00 to 4·00 grammes, Bergamot Ess. ·03 gramme. Ft. pulv. et div. in chart. No. xx. Sig. j every two hours. **Stomach Washing** is advised for dyspepsia of infants with regurgitation of food soon after each meal ; in acute gastro-intestinal catarrh, or cholera infantum, as soon after vomiting begins as possible ; in chronic catarrh of the alimentary tract.

DIGESTION (Disorders of). (See also "Dyspepsia" and "Gastric Neurasthenia.")

DIPHTHERIA. *Henry Dwight Chapin, M.D., New York.*

Dr. Haberkorn advises applications of **Salicylic Acid** to the tonsils by means of a camel's hair brush. He first uses the following mixture :—

℞ Acid. Salicyl.	2·0	Syr. Rub. Id.	20·0.
Sol. Gumm.	180·0		

Sig. To be used every two hours.

If the mucous membrane is thick he employs the following :—

℞ Pepsini	2·0	Aq. Dest.	20·0
Acid. Muriat.	0·5	Glycerin.	15·0

As an aid to the first mixture he often follows with :—

℞ Acid. Tannici	1·0	Aq. Dest.	188·0
Tinct. Iodi.	gtt. ij	Glycerin.	20·0

Sig. To be used every three hours.

Dr. Schendel uses a new drug called **Tinct. Rusci Composita.** In forty-three cases he has employed this preparation every hour through the day and every two hours through the night in doses of 1 teaspoonful. In children under two years he has used a less dose, and, on account of the bad taste, given it in Hungarian wine. If the children would not take nourishment well, artificial feeding was employed.

Dr. Justus Andeer uses **Resorcin** every hour in the day and every two hours at night, with the following mixture, and by means of a camel's hair brush :—

℞ Resorcini Puriss	3·0	Glycerini	30·0.

At the same time the following spray in Lister's apparatus :—

℞ Resorcini Puriss	50·0	Aq. Destill.	1000·0.

A good adjuvant is 2 or 3 tablespoonsful in twenty-four hours of :—

℞ Resorcini Puriss	10·0	Syrup. Terebinth.	500·0.

The addition of glycerin to resorcin seems to have a good effect upon the mucous membrane.

Dr. George W. Major claims the following advantages for **Peroxide of Hydrogen** as a solvent of diphtheritic membrane : (*a*,) It offends neither the sense of taste nor smell, being tasteless and odourless ; (*b*,) When applied locally, it causes no irritation and occasions no pain ; (*c*,) When swallowed it is harmless, as it is not poisonous ; (*d*,) It is a powerful antiseptic and deodorizer ; (*e*,) It in no way precludes the simultaneous use of any other local remedy ; (*f*,) It is a perfect solvent for the exudate of diphtheria. When used locally, the membrane seems to corrode, and comes away in fragments of a more or less porous character ; (*g*,) In nasal cases it keeps the nose free from membrane, and gives the bichloride, or other solution, a chance to act ; (*h*,) In the most offensive cases it deprives the discharges of their unpleasant odour. He generally commences its use as a 60 per cent.

solution, increasing to the full strength of the so-called "ten volume" peroxide of hydrogen. When used internally the dose is ½ to 2 drachms.

Dr. A. W. Nelson advises the local application of **Salicylic Acid** as a solvent of diphtheritic membrane without irritation of the living structures. Hourly use of the acid, which is a very light powder, does not affect the youngest patient unfavourably by the amount swallowed or absorbed.

Dr. James Hendrie Lloyd recommends the substitution of **Chloride of Ammonium** for chlorate of potassium in the treatment of diphtheria. The former will do all that the latter drug can accomplish, and without its injurious effects. The physiological action of chloride of ammonium indicates, to a certain extent, its therapeutic use. It acts as a stimulant to the mucous membrane, increasing the normal secretion and so diluting and dissolving thick, tenacious mucus and fibrinous masses. That it has any true antiseptic action, either locally or in the blood, cannot be affirmed, and the same must be said of the chlorate of potassium in safe therapeutic doses. It is eliminated unchanged in the urine, and without any apparent irritating effects upon the kidneys. The chloride of ammonium makes an admirable mixture with the tincture of the chloride of iron, and in combination with this invaluable drug constitutes a remedy for diphtheria in which experience has taught him to place an unusual degree of confidence. The tincture of the chloride of iron is in itself the one remedy which seems to hold its place in the esteem of every practitioner. Such universal testimony cannot be without great weight. It is most important that this remedy should be applied locally and thoroughly to the membrane. A mixture of ½ drachm each of the iron and of the chloride of ammonium to 1 ounce of a thick syrup (preferably of tolu) may be administered internally every two hours in teaspoonful doses, and at the same time a soft camel's hair throat-brush is to be used to apply the mixture thoroughly to the diseased parts.

The corrosive **Chloride of Mercury** appears on some accounts to be the model remedy for diphtheria, and it can be used both locally and internally. As an antiseptic spray it probably has no superior. It can be used as strong as 1 to 4000 (and in some cases stronger). The amount which thus enters the stomach is small, and promotes the cure. It can be combined for internal use with the tincture of the chloride of iron ($\frac{1}{15}$ to $\frac{1}{24}$ grain in 3 to 8 drops of the iron) and given every two hours. As between the spray and the brush, the author considers the latter more effectual for the fauces, while the spray is necessary for the nasal cavities.

Dr. A. Jacobi (Tenth International Med. Congress at Berlin) read a paper entitled, "American Therapeutics of Diphtheria." Extra attention is now being devoted to prophylaxis. Practitioners endeavoured to preserve the general health of their patients by the use of cold water, and the catarrh of the mucous membranes of the nose and throat were combated with salt water, boracic acid, nitrate of silver, exsection of hypertrophied tonsils, etc. Chlorate of potassium was employed to preserve intact or to restore the mucous membrane of the oral cavity, tincture of the chloride of iron for its anti-fermentative and astringent effect, in frequent doses, so that a child of a year takes from 3 to 4 grammes daily, in twenty or forty doses. The local treatment of diphtheritic wounds or surfaces (circumcised prepuce, vagina) was mostly by tincture of iodine, iodoform in powder or ointments, or solutions of bichloride of mercury, 1 in 1000 or 3000.

Nasal diphtheria is best treated by some warm, mild injection. Conjunctival diphther a he treated with ice and strong solutions of **Boracic Acid.** Referring to the medical treatment of diphtheria, he was of opinion that it was impossible to give too much **Brandy** in this disease, and stated that from 50 to 1000 grammes might be given daily with advantage. Alcohol ought to be given early, and a certain quantity in all cases, seeing that heart failure comes unexpectedly, and then stimulation comes generally too late. It was therefore a good practice to give cardiac tonics in time. **Strychnine** was indispensable in diphtheritic paralysis. The author spoke of the effects of mercury on this disease, and then alluded to the operative treatment by intubation, which had supplanted tracheotomy because of the rapidity, bloodlessness, and equal efficiency with which it can be performed. Its results in the hands of its discoverer, O'Dwyer, were as good as those in tracheotomy. Every case was managed according to its individual indications; isolation was enforced, fluid food given, moderate stimulation resorted to, absolute rest enjoined, even the nasal injections are made in a recumbent or semi-recumbent posture, and complications watched and treated.

Dr. Zannellis employs **Iodoform** in the treatment of diphtheria, on account of its antiseptic, analgesic, anæsthetic, and anti-spasmodic properties. It is slowly absorbed, and so acts not only upon the bacillus, but upon the diphtheritic poison, of which it neutralizes the chemical composition, arrests its diastasic power, and acts against its toxic effects.

Dr. Babchinski, while attending a grave case of diphtheria in the person of his son, noticed that a rapid change for the better occurred coincidentally with the appearance of erysipelas on the face. The idea

of inoculating diphtheria cases with blood taken from patients suffering from erysipelas occurred to the doctor, and he states that in several cases in which he employed this procedure cure resulted. Later on he practised inoculation of other cases of diphtheria with cultures of the microbe of erysipelas in agar-agar, and likewise noticed the disappearance of the symptoms of diphtheria.

REFERENCES.—"Centralb. f. Chir.," No. 32, 1889; "Berl. Klin. Wochenschr.," No. 6, 1890; "St. Petersburg Med. Wochenschr.," No. 20, 1890; "Jour. Amer. Med. Assoc.," March 22, 1890; "Med. News," Aug. 9, 1890; "Jour. de Méd.," June 2, 1889; "Répertoire de Pharmacie," July 10, 1890.

Synopsis.—(Vol. 1889, p. 230.) ℞ Ol. Terebinth, ʒj, Sp. Ætheris. ♏iv, M. Sig. ter. in die. and in addition 2% Sol. Sod. Salicyl., ℥ss sec. hor. using 1% warm solution Potass. Chlorat. as gargle and ice bag externally; ℞ Precipitated Sulphur (pure) ʒiss, Chocolate Powder. ʒj, Cinnamon-water (concentrated 1 in 40) ʒj, Glycerine to make ʒiij.

Mix the powders together in a mortar, then gradually add the glycerine, with constant trituration, and lastly the cinnamon-water. If kept in tightly corked, sealed, or stoppered bottles, this preparation will keep well for a very long time. It of course requires shaking before use. The mixture is remarkably palatable, and is readily taken both by children and adults. Each drachm contains about ij grains.

Sig. ½ to 1 teaspoonful to be taken every hour or oftener. The dose should vary according to the age of the patient. The mixture ought to be continued for at least five days, but at less frequent intervals after the severity of the symptoms has abated.

Borax, xl centigrammes to j gramme for children under 1 year; j to jss grammes from 2 to 5 years; ij grammes from 5 to 10 years; and iij, iv, or v grammes for adults (per diem); **Hydrogen Peroxide** locally (aqueous solution); **Mercurial Fumigations** volatilizing grs. xl to lx under a canopy for 20 minutes, repeating this every 2 or 3 hours the first day; after **Tracheotomy** a cannula with **Iodoform Tampon. Concillana Bark** for diphtheria, grs. x to xl (p. 34).

(Vol. 1890, p. 229.) Caldwell recommends keeping the **Bowels open**, injection of 2 to 6 ounces of **Milk** every two hours, and **Spraying the Throat** every hour until temperature is reduced and breathing easy, then every hour, unless asleep, ℞ Papain ʒij, Hydronaphthol gr. iij, Ac. Hydrochlor. dil. gtt. xv, Aq. dest. ad ℥iv, M. Keeping patient in **Sulphur fumes** has given good results, also the local application of **Sulphur. Vlemingkx's Solution** as spray. Irrigation of mouth or nasal fossæ with **Salicylic Acid** solution, 1½ to 2 in 1000 (1—1000 to 1—1500 in children) frequently repeated. Swabbing with **Citron Juice** when membrane is very firm and thick. **Calomel** locally applied, mixed with **Powdered Starch**; cold compresses to the throat, and a mixture containing **Nitrate of Sodium** internally. As cardiac stimulants, **Digitalis** or **Sulphate of Sparteine**, gr. $\frac{1}{10}$ four times daily, or hourly in emergency. **Alcohol, Caffein, Camphor, Strychnine**, or **Siberian Musk** (10 to 15 grs. every three or four hours in thin mucilage), **Hydrarg. Bichlor.** gr. $\frac{1}{60}$ to $\frac{1}{50}$ freely diluted with milk or water. **Hydrochloric Acid**, diluted with three or four parts of **Glycerine**, or **Glycerine of Carbolic Acid** locally. **Iodoform** or **Boric Acid** blown into nostrils or

pharynx. Painting nostrils with solution of **Gallic Acid** 10 parts, **Distilled Water** 60 parts, and **Glycerine** 10 parts, every six or eight hours. As a gargle, **Chlorine Water** 1 part, **Distilled Water** 3 parts. Insufflation of **Powdered Sugar**, supplemented by vigorous tonic treatment. Application of plugs of **Cotton**, wetted with 20% oily solution of **Menthol** for nasal diphtheria.

DIURETICS.

Robert Saundby, M.D., F.R.C.P.

Dujardin-Beaumetz, in a lecture on diuretic remedies, maintains that **Digitalis** is superior to digitaline, and the French alkaloid superior to the German. **Strophanthus** is almost on a par with digitalis, and he has never seen anything in its action to bear out the view that it may set up nephritis (Ergasse). Sparteine, adonis and convallaria, are of secondary value. Caffeine should be used hypodermically.

℞ Pure Caffeine.		Boiled Water	ʒ jss.
Benzoate of Sodium āā ʒss.		M.	

Inject a whole syringeful of this solution into a fleshy part of the body and repeat two or three times a day. **Theobromine** is of equal value, and Gram employs the salicylate of theobromine in doses of 90 grains daily. The **Kola Nut** is another diuretic, of which we may use an infusion, prepared like coffee, a tincture, or a fluid extract.

Lactose and **Glucose** are diuretics, and this is not accompanied by glycosuria, when the regulation daily dose of 100 grammes (3½ ounces) of glucose syrup is not exceeded.

Where there is repugnance to sugar these remedies may be administered by the rectum. Germain Sée strongly supports the claims of milk sugar to be regarded as a diuretic, in the above mentioned dose. Sugars are more valuable in dropsy of cardiac origin.

Meilach suggests that the grape cure probably acts through the glucose in the grapes, and Pecholier has published notes of a case of cardiac dropsy, and one of cirrhosis with ascites, in which the grape cure was undertaken with the best results. By the former patient five pounds of grapes were eaten daily in three portions.

Buttermilk as a diuretic has been recommended by Henry J. White, who saw its good effects in an elderly woman suffering from renal dropsy. She took about two quarts in twenty-four hours. Ward confirms this, and quotes another case in which the patient drank almost a gallon a day. Buttermilk contains 6·4 per cent. of lactose (Pavy), and is an admirable diuretic and laxative. Its taste is probably the greatest obstacle to its use.

Calomel as a diuretic in cardiac disease is undoubtedly useful, but probably the old pill of blue mass, digitalis and squill, cannot be beaten. Fürbringer thinks digitalis is the best diuretic there is, and most will agree with him.

DRAINAGE TUBES (In Surgical Practice). *W. J. Penny, F.R.C.S.*

Mr. Rickman J. Godlee, in a paper read before the Ipswich Clinical Society, discusses the question of the use and abuse of the drainage tube, and arrives at the following conclusions with regard to small and large wounds: In any case to employ very long tubes is to abuse their use. In large and complicated wounds it seems to me that short tubes are indicated; in the smaller wounds they should be dispensed with, and wherever they are used they should be removed early. I need not add that the ends should be made to fit on the surface of the skin, and that the holes should not be cut so as to weaken the tube more than is necessary.

But there remains the question: What are the advantages of doing without them? To which the following answers may be given: (1,) The healing is more rapid; (2,) The scar is more uniformly linear; (3,) The chance of failing with the antiseptic element is much diminished; for we all know that the risks of such failure are greater during the periodical changing of the dressings, and when the discharge is allowed to soak through them or to their edges, than at the time of the operation.

On the other hand the disadvantages are: (1,) That the temperature does not seem to keep so absolutely normal as we are accustomed to see it in perfectly drained wounds; (2,) There is the risk I have dwelt upon of blood or serum collecting under the flaps; and, while in many cases this may be absorbed, in certain others it will require removal, and then the cure is probably longer than it would have been if drainage had been employed from the first.

I should add that in cases of trephining Mr. Horsley advocates the disuse of drainage tubes, as he maintains that without them an escape of cerebro-spinal fluid or a hernia cerebri is least likely to occur.

Lastly, Mr. Godlee says a word about peritoneal drainage. In simple explorations, or in cases where but little laceration of the peritoneum or bleeding has occurred, it is now generally recognized that the peritoneum is well able to take care of any fluid that may be effused; but if these conditions are not fulfilled, and if there be the slightest chance of fouling of the peritoneum, drainage is called for. A glass tube is probably the most satisfactory means for effecting it at our disposal. It may be brought out at the incision, or it may be necessary to make a counter-opening for it in the loin, or, if the incision be high and it be necessary to drain the pelvis, the counter-opening may be made lower down in the middle line. The tubes are of varying length, and it is often advisable to introduce one to the very bottom of the pelvis, and sometimes to draw out fluid from the tube from time to time, by

means of a syringe, to the end of which a fine india-rubber tube is attached.

REFERENCE.—"The Practitioner," Feb., 1890.

DROPSY. (See also "Ascites," "Bright's Disease," "Heart," etc.)

Synopsis.—(Vol. 1889.) **Delphinium Staphisagria,** gr. $\frac{1}{60}$ hypodermically as diuretic (p. 37); also **Phyllanthus Niruri,** dose ʒij (p. 61); **Ulexine** (p. 71); **Orthosyphon Stamineus** in infusion (x grammes to j litre of water) said to be a harmless but powerful diuretic (p. 57).

DUPUYTREN'S CONTRACTION. (See "Orthopædics.")

DYSENTERY. *Alexander Crombie, M.D.*

Mr. John Hepburn, of Hammersmith, reports a case of chronic dysentery of severe type, in which two enemata daily, each consisting of half an ounce of **Alum,** dissolved in half a pint of water, were used successfully, after opium, bismuth, ipecacuanha, Dover's powder, and other astringents had failed. Dr. Easby used **Cupri Sulph.** gr. x, tinct. opii ʒj, and aq. ʒiv, with similar success in a case in which there was profuse bleeding from the bowel. Dep.-Insp.-Gen. H. F. Norbury confirms the success of Dr. Hepburn's treatment with enemata of alum ("Lancet," Aug. 3, Aug. 12, 1889, and Jan. 11, 1890).

Surgeon A. W. D. Leahy reports nine-five cases of acute dysentery treated by the administration of a saturated solution of **Epsom Salts,** after the manner recommended by Bartholow. There were only three deaths in the whole number, and of these two were moribund on admission to hospital. This treatment is only admissible in acute cases, and the more chronic the case becomes the less apparent are its advantages. A drachm of the saturated solution of **Sulphate of Magnesia,** with ten drops of dilute **Sulphuric Acid,** are given every hour or two, until the stools have become copious, fæculent, and free from blood and mucus, the temperature has fallen, and the pain and tenesmus have ceased: a consummation which is apparently attained in from two to three days. Mr. Leahy claims as the advantage of this treatment over that by large doses of ipecacuanha: (*a*,) That it has no depressant action on the system; (*b*,) That it produces neither nausea nor vomiting; (*c*,) That it quiets and soothes the patient; and (*d*,) That by relieving hyperæmia of the mucous membrane it probably prevents the formation of ulcers within the bowel, and favours the healing of those already in existence. He made no control experiments to ascertain what the effect of rest in bed and careful dieting, without the administration of any drug, would be in similar cases of acute dysentery, and those who propose to adopt the treatment of chronic dysentery recommended as above by Hepburn, etc., would do well to bear in

mind that the dysenteric ulceration often extends throughout the whole length of the large intestine, and, therefore, probably in parts which are beyond the reach of any enemata.

Synopsis.—(Vol. 1889, p. 233.) Aconite in small and frequent doses; Tinct. Cannabis Indica with Tinct. Hyoscyami; Opiate Enemata (with or without ipecacuanha) after each motion; Ipecacuanha in small doses with Dover's Powder until feeling of nausea is produced; Argent. Nitrat. in Enemata, each containing grs. x to ℥vj of water, repeating this if necessary. In chronic cases, larger doses of the salt are required; Persulphate of Iron and also Nitric Acid have been used as injections; Subnitrate of Bismuth, ʒj or ij doses; Hydrastin, or Lead Acetate has been suggested. Geranium Maculatum, grs. x to xl, and also as injection (p. 42).

(Vol. 1890, p. 234.) Injection of ½% emulsion of Creoline by long rectal tube, allowing it to remain as long as possible, and repeating it twice or thrice daily; should catarrh remain after arrest of the dysentery, injections of Lead Acetate and Tannic Acid with Cinchona and Sulphate of Soda may be required. ℞ Liq. Hydrarg. Perchlor. ʒss, Tinct. Cannab. Indic. ♏x, Mucil. Tragacanth ʒj. Sig. to be taken from four to eight times daily, according to urgency of symptoms.

DYSHIDROSIS POMPHOLYX, or CHEIRO-POMPHOLYX.

Synopsis.—(Vol. 1889, p. 234.) *General Tonics.*—Arsenic, Quinine, Strychnine, and Iron; bathing with gruel; a dusting powder of French Chalk and Boracic Acid, and internally ℞ Potass. Acet., ʒiv, Tinct. Nuc. Vom., ʒj, Tinct. Cinchonæ ad ℥iv, Sig. a teaspoonful well diluted 3 times a day (Jamieson); Zinc Oleate or Ung. Plumbi relieve tingling and tension (Crocker); Full doses of Fowler's Solution or Arsenious Acid given until all traces of vesicles disappear (Shoemaker).

(Vol. 1890, p. 235.) Tonics, with Change of Air and Open-air Exercise, avoiding soap, Bathing with Gruel, and applying as dusting powder, ℞ Salicylic Acid 3·0, Talc 87·0, Oleate of Zinc 10·0.

DYSMENORRHŒA.

Synopsis.—(Vol. 1890, p. 236). When sudden and accompanied by pyrexia, Tinc. Aconiti, ♏j hourly; Liq. Ammonii Acet., ℥ss in four hours; Tinc. Pulsatilla, ♏v in four hours; Mustard Baths and the Hot Pack; Opium or Chloral alone or combined may be necessary. *In Ovarian Dysmenorrhœa*, with scanty flow and delayed functional development, Iodide of Potassium in increasing doses; Nux Vomica, Quinine and Iron; Intra-uterine Faradisation is useful when flow is sufficient or profuse; Bromides, Ext. Hydrastis, Canad. Liq., ♏xv to xx; Ext. Salic. Nig. Liq., ♏xv to xx; Tinc. Cannab. Indic., ♏v hourly for seven or eight doses; and Hot Injections are useful; Belladonna Suppositories (gr. ¼ to ij of Extract) may relieve pain; Belladonna and Cannabis Indica Suppositories, containing ¼ gr. of each Extract, and used every night or night and morning. *In Uterine Dysmenorrhœa*, Ext. Viburn. Prunifol. Liq., ʒss every four hours; Ext. Ergot Liq., ♏v to x; Tinc. Actææ Racemosæ, ♏x to xx (when there is rheumatic history); Potassii Iodidi, gr. v to xv; Liq. Strychniæ, ♏iij to v; Tinc. Caulophylli, ♏v to xx; Antipyrin, gr. iij to v (in menstrual colic). *Dilatation of Cervix:* by graduated sounds or forcible dilators under anæsthesia. *Division of Cervix:* Galvanism.

DYSPEPSIA. (See also "Gastric Neurasthenia.")

P. Watson Williams, M.B.

It cannot be said that the phenomena of indigestion have not received their share of careful investigation at the hands of the profession, yet we have to deplore that clinical results indicate most surely that our pathological knowledge of its many varieties is still most imperfect.

The valuable contributions of Dr. Hamilton (Glasgow), on "The Pathology of Acid Gastric Dyspepsia," and of Dr. Christopher (Ohio), on "Intestinal Super-Digestion," are worthy, therefore, of our most careful consideration.

There is one fact that is clearly enough made out, viz., that in a large majority of cases of acid dyspepsia, there is no evident anatomical lesion. Were the conditions such as to permit of a reliable examination being made, no doubt minute alterations would be found, at least, in instances of chronic dyspepsia, but in the majority of cases, all matters considered, we are bound to conclude that gastric dyspepsia, in the first instance, is a purely functional derangement.

We are reminded by Dr. Christopher that in studying the subject of indigestion it must be borne in mind that the normal digestive processes are fermentations; that they are induced by soluble or unorganized ferments; that the pathological fermentations are maintained by organized ferments and different micro-organisms; and that many organized ferments require that the substances which they are to act upon shall first have been modified by some other ferment, either soluble or organized, before they can exert their peculiar action. For instance, the yeast-plant cannot ferment cane-sugar directly, while it can induce the alcoholic fermentation in the glucoses. In the fermentation of cane-sugar by the yeast plant, the sugar is first inverted—that is, transformed into dextrose and lævulose—two glucoses—before the alcoholic fermentation occurs. The inverting of the cane-sugar is accomplished by a soluble ferment which accompanies, and is probably, therefore, produced by the yeast plant itself. At all events its action precedes the alcoholic fermentation induced by the plant. Similarly, according to Schützenberger, the butyric fermentation is usually, perhaps invariably, preceded by the lactic fermentation. It seems that certain changes in the albuminous constituents of milk are produced by the lactic ferment, which fit these albumins to nourish the butyric ferment, and thus enable it to grow.

Although it is universally admitted that hydrochloric acid is the acid which in normal digestion confers acidity on the gastric juice, yet in the course of natural digestion, lactic acid is found in large

quantities; while under pathological conditions butyric and other acids make their appearance. The important practical point on which Dr. Hamilton lays stress is, that in the digestion of a mixed meal, two acids make their appearance, and always in a particular order. Lactic acid is the cause of the acidity in the first instance, hydrochloric in the second. The lactic acid is derived chiefly from the fermentation of carbohydrates, but also, by simple solution, from the meat consumed. The better the stomach is working the sooner the lactic acid, called forth by a mixed diet, disappears, and is replaced by hydrochloric acid. What becomes of the lactic acid is not known. Maby supposed it might be converted into hydrochloric acid.

Dr. Hamilton, in summarizing the results of his investigations, finds that: (1,) The acid which gives acid dyspepsia its peculiar character is usually lactic, but in rare cases may be hydrochloric. In still other cases the acidity due to lactic acid is augmented by the presence of various volatile organic acids; (2,) The excess of lactic acid may be a result of prolongation of the natural lactic acid stage of digestion, or it may be furnished by the grape sugar developed from the sugars in a dietary. A small part of it is possibly grape sugar resulting from the action of salivary diastase upon starch; (3,) The cause of the prolongation of the lactic acid stage of digestion is the deficiency in hydrochloric acid, which ought naturally to take the place of the lactic; (4,) The fermentation of the grape sugar into lactic acid is brought about by living vegetable organisms, always more or less abundant in the stomach. This fermentation most likely is permitted by deficiency in the quantity and proteolitic quality of the gastric juice. The carbohydrates consequently undergo a wrong decomposition, while the proteids remain undissolved; (5,) In those cases where acidity is caused by superabundance of hydrochloric acid the excess of acid manifests itself in two ways: (*a*,) where the acid is secreted in a gush immediately on the introduction of food; and (*b*,) where it accumulates in the stomach during fasting. In both cases the effect is to neutralize the alkalinity of the saliva too soon, and thus hinder the digestion of starchy food, which accordingly accumulates in the stomach and acts as an encumbrance.

Inasmuch as the forms of indigestion we are considering are the result of carrying normal processes of fermentation into abnormal stages, Dr. Christopher prefers the term *super*-digestion to *in*digestion. As in the gastric digestion of proteids the process ends with the formation of peptones, butyric acid fermentation in the stomach is rare. But in pancreatic digestion of proteids the decomposition of the albuminoid molecule is more profound, and we find in addition to

the peptones, leucine, tyrosine, hypoxanthin, aspartic acid, and glycocoll. With these products the fermenting action of the pancreatic juice probably ends, but this action has paved the way for the growth of micro-organisms, which flourish among the products of tryptic digestion, and as the result of their action upon these products there are produced such bodies as indol, scatol, sulphuretted hydrogen, and ptomaines, etc.

Thus the author defines super-digestion as pathological fermentation of the products of normal digestion. It is always produced by micro-organisms, and varies according to the food.

Super-digestion of proteids and fats is not common, but the glucoses derived from the carbo-hydrate food in normal digestion, in many cases of acid dyspepsia, undergo an alcoholic fermentation with the liberation of carbonic-acid gas.

That the micro-organisms which are immediately concerned in these abnormal fermentative changes are only present when the secretions of the digestive organs are abnormal, is well shown by the investigations of Drs. Kurlow and Wagner, on the "Influence of Gastric Juice on Pathogenic Germs," which they publish in the "Vrach," from which they are led to the conclusion that constant or specific microbes do not exist in the stomach, and those which enter it, together with sputum, food, or other ingesta, are only accidental and temporary residents, and cannot live in the normally acid contents of the stomach. Gastric juice is, according to these observers, an exceedingly strong germicidal agent, and when living bacilli get into the intestinal canal it is due to various conditions entirely independent of the gastric juice. When the latter is normal and in full activity, only the most prolific microbes, such as tubercle bacilli, the bacilli of anthrax, and perhaps the staphylococci, escape its destructive action; all others are destroyed in less than half an hour. Similar influences exist in the intestines, as proved by inoculations with the cholera bacilli.

It should be clearly understood then, that the forms of dyspepsia which are complicated by the action of these fermentative organisms, are really due, in the first place, to deficiency in the quality of the digestive secretion.

Dr. Christison refers to intestinal super-digestion under three heads :—

(*a*,) Super-digestion of proteids. Proteids are digested both by the gastric and by the pancreatic juices, but super-digestion of the products of gastric digestion is infrequent, at least in the stomach, while further change of the pancreatic products is exceedingly common, a difference probably due to the difference in extent of the digestion or

decomposition of the albuminoid molecule produced by these juices. The most interesting of the intestinal decomposition of proteids are the fatty acids, the ptomaines, and the gases. Certain of these gases unite with each other, forming non-volatile salts; so that in super-digestion of proteids flatulence is not marked except in certain cases of diarrhœa producing putrefactions. The ptomaines are the important products for consideration. These bodies are alkaloids, and, like the vegetable alkaloids, produce their effects through the agency of the central nervous system. They are partly excreted with the fæces, and, in part, absorbed. After absorption they have another gauntlet to run in the liver, one of whose functions, as Schiff has shown, is to destroy these bodies. Consequently it is only when they are formed in excess, or the liver fails to destroy them, that they gain entrance to the general circulation and produce general effects. A not uncommon group of symptoms produced in this way, comprises constipation, headache, drowsiness, and listlessness, or even marked depression—the so-called biliousness—and, in infants, Dr. Christison has occasionally seen constipation, coma, contracted pupils, slow and shallow respiration, and a depressed heart-action from this form of proteid super-digestion.

The treatment consists: (1,) In the use of a cathartic, preferably **Calomel,** to remove the putrefying masses from the intestine; (2,) In the administration of an intestinal antiseptic, such as **Naphthaline, Salol, Bismuth Salicylate, Quinine Tannate,** or small doses of **Calomel**; and (3,) In withholding all albuminous food until the abnormal process in the intestine has entirely ceased. Of these three steps the most important is the one relating to diet. By it alone many cases can be controlled. *The least important is the use of intestinal antiseptics,* and much disappointment arises from depending on this means alone.

(*b*,) Super-digestion of fats. Owing to the comparatively small quantity of fat taken as a food, the gases resulting from its fermentation do not, of themselves, constitute an important clinical factor. The gaseous fermentation of fats occurs most frequently in connection with a similar fermentation of carbohydrates.

(*c*,) Super-digestion of carbohydrates. We have already referred to Dr. Hamilton's conclusions as to the various ways in which the digestion of carbohydrate food by the saliva in the stomach may be abnormally modified, giving rise to acid gastric dyspepsia.

Dr. Christopher reminds us that in normal digestion all the carbohydrates are converted into glucoses; that from abnormal fermentation glucose may be converted into lactic acid. Thus: $C_6H_{12}O_6$

(Glucose) = 2 ($C_3H_6O_3$) (Lactic Acid). And, further, the lactic acid undergoes the butyric acid reaction. Thus: 2 $C_3H_6O_3$ (Lactic Acid) = $C_4H_8O_2$ (Butyric Acid) + 2 CO_2 (Carbonic Acid Gas) + 2 H_2O (Water). Or the glucose may undergo the alcoholic fermentation, and the resulting alcohol, in its turn, the acetous fermentation, forming acetic acid.

The clinical features of this super-digestion of carbohydrates are very well exhibited by a patient of Dr. Christison's. He had been ill for three weeks with severe pain, which could ordinarily be referred to the abdomen, but at times seemed to spread over a much larger region, so that it was difficult to say where there was not pain. Distress had been constant, with exacerbations, and paroxysms of marked severity at night. His appearance was one of emaciation, with features pinched and drawn; the abdomen considerably distended, and tympanitic; bowels slightly costive. He was given a saline laxative, and his diet strictly limited to albuminous foods, even milk, as it contained sugar, being forbidden. He reported himself better the next day than he had been for three weeks, and this freedom from pain continued throughout the case. In a fortnight he was able to return to carbohydrate food without any discomfort. During the period of dieting, intestinal antiseptics were administered, but the doctor doubts if any advantage was gained from their use.

In this form of dyspepsia, Dr. Christison often finds great service from the use of a diastatic ferment. The choice of a diastase is by no means unimportant. The pancreatic ferments should be avoided, lest by their action on the proteids they pave the way for more trouble. An active malt diastase is to be preferred. By this means we are enabled to digest starch in the stomach, from which organ it is absorbed, so that little or none of it can reach the seat of trouble in the intestine.

The value of diastasic food is discussed by Dr. Robert Ormsby. He found it of great assistance in the treatment of gout and rheumatism, and in the forced feeding of phthisical patients. In certain cases of diabetes in elderly people he has found the sugar in the urine completely disappear during the administration of diastasic food without the carbohydrates being eliminated from their diet.

Wettendorfer, in the "Deutsche Med. Woch." speaks highly of the treatment of dyspepsia, flatulency, torpid digestion, etc., by the application of abdominal compression, in the shape of an elastic bandage about twelve inches wide. Wettendorfer struck upon the plan merely by accident. While treating a patient for chronic eczema of the trunk with a Martin's rubber bandage, he observed a rapid and complete disappearance of all symptoms of indigestion, from which

the patient had been a great sufferer. Since then the treatment has been used in a large number of cases of dyspepsia and flatulency with great success.

Gastric Antacids and Sedatives.—Sir William Roberts, in an address delivered at the opening of the section of pharmacology and therapeutics at the annual meeting of the British Medical Association, directs attention to some practical points in the use of antacid remedies in dyspepsia. He says that although the objects in view are so simple, and the means of attaining them so well known, there are a number of practical points in carrying out the indicated lines of treatment which are neither simple nor well known. Gastric antacids are employed in two distinct classes of cases—namely, in acid dyspepsia, and, secondly, in a variety of conditions characterized by great irritation of the stomach, often with vomiting, which we seek to allay by the administration of milk mixed with lime water. The most advantageous mode of administering antacids for acid dyspepsia is in the guise of the lozenge. A lozenge, properly used, should be deliberately sucked, not roughly chewed and swallowed. The process of sucking induces a plentiful flow of alkaline saliva, and the presence in the stomach of this bland demulcent secretion is soothing to the angry mucous membranes. If the lozenge be hastily swallowed, the patient misses the concurrent flow of saliva which is distinctly helpful to dyspeptics. A most effective antacid lozenge is one containing the same antacid charge as the trochiscus bismuthi, B.P., but excluding the bismuth and adding 1 grain of sodium chloride, which sharpens its flavour. With respect to the comparative merits of the several gastric antacids, the alkaline bicarbonates have a nauseous taste; and if given in excess they leave an objectionable alkaline residuum in the stomach. The earthy carbonates, on the other hand, are tasteless, and, owing to their insolubility, they cannot, when taken in excess, cause the neutral line to be over-passed. Perhaps the most advantageous course would be to vary and change the antacid from time to time. When prescribing the bismuth lozenges, Sir William Roberts invariably enjoins the following strict rules in regard to their use: Never to use them at or near meal-times—nor sooner than an hour or an hour and a half after dinner; they are not to be used regularly and systematically, but only as occasion arises, when gastric pain is distinctly present; and they are to be discontinued if their employment does not cut short the pain. An antacid dose is sometimes a useful means of diagnosis in cases of gastralgia. It is often impossible to decide what may be the real nature of the pains complained of. In such a case, if an effective antacid dose fail to give relief, it is sure

evidence that the pains are not due to gastric acidity. It is a very general practice, when the stomach is intolerant of food, to administer milk with lime water, and often with the happiest results. The failure that is repeatedly encountered is simply due to the feeble antacid charge; but when a solution of 5 to 10 grains per ounce of bicarbonate of sodium is substituted for lime water as an admixture with milk, a favourable result is at once obtained, and the vomiting of hard curds arrested; the fact being that the saturating power of lime water is really very low, six ounces of it being only equivalent in this respect to one grain of chalk, and a grain and a half of bicarbonate of sodium. (See also "Gastric Neurasthenia.")

REFERENCES.—"Brit. Med. Jour.," Aug. 9, 1890; "New York Med. Jour.," Nov. 9, 1889; Ibid., Jan. 25, 1890; "Med. News," p. 376, 1889; "Practitioner," xliii, p. 368.

Synopsis.—(Vol. 1889, p. 236.) **Sulphate** and **Carbonate of Magnesia**; **Sulphate, Tartrate,** and **Carbonate of Soda**; **Aloes, Rhubarb,** etc. are used to relieve congestion, having exosmotic action. The **Carbonates of Ammonia, Soda,** and **Potash**; the **Nitrates** and **Iodides of Potash** and **Soda** act as endosmotics, both classes being indicated to unload bloodvessels of alimentary tract, and to relieve pain, ♏ij or iij of **Morphine Solution** or **Chlorodyne** may be added (Illingworth). If cases are more chronic, carminatives, *e.g.*, **Cardamoms, Ginger,** and **Capsicum** are required; also **Nux Vomica** and **Belladonna** as stimulants; ℞ Ammon. Carb., ʒss to j, Magnes. Sulph., ʒiij to vj, Tinct. Belladonn., ʒj, Tinct. Nuc. Vom., ʒj, Sp. Ætheris Chlor., ʒij, Tinct. Zingib., ʒij, Aq. Menth. Pip. ad ʒvj, M. Ft. Mist. Sig. Capiat æger semiunciam quart. horis. If after these remedies a debilitated state remains **Acid** and **Nux Vomica** are useful if given after meals. If elderly people complain that "food lies like lead" on the stomach, **Acids** are required. In flatulent colic, due to congestion of large venous tracts, the endosmotics are indicated, *e.g.*, ℞ Sp. Ammon. Aromat., Liq. Ammon. Acet. āā ʒiij, Sp. Æther Chlor., ʒij, Tinct. Zingib., ʒij, Tinct. Belladonn., ʒj, Aq. Menth. Pip. ad ʒvj, Ft. Mist. Sig. ʒj omni quadrante horæ vel pro re nata. If the tongue is very foul and constipation present, add the **Sulphate** or **Carbonate of Magnesia.** If gall-bladder is affected with spasm, **Calomel** and **Opium Pill.** In atonic dyspepsia with sluggish portal circulation and constipation, especially when there is a tendency to biliary or urinary calculi, **Tinct. Berberis,** ♏v to x is useful (p. 23). In acute and chronic gastric catarrh and dyspepsia, **Kava-Kava,** grs. 1½ t.d. is valuable (p. 50).

(Vol. 1890, p. 238.) **Gastric Lavage** with water, to which a few drops of 20% alcoholic solution of **Thymol** may be added (useful in habitual vomiting after weaning, atony of intestine, as in rickets, and in chronic dyspepsia); **Bismuth Lozenges** in acid dyspepsia. ℞ Pure Creasote gtt. 10, Bicarb. of Sodium gr. 120, Powdered Gum Arabic q.s., Water ʒv, M. A tablespoonful one hour after each meal. ℞ Pepsini gr. 60, Creasote gtt. 10, Carb. of Bismuth gr. 60, M. Divide into thirty portions, giving one in a gelatine capsule. When acid eructations and pain are present, **Papain,** 10 or 15 centigrammes, mixed with **Sugar of Milk,** 25 to 30 centigrammes are

given in a mixture containing **Bicarbonate of Sodium, Carbonate of Ammonium, Carbolic Acid,** and **Glycerine,** an hour or two after food; **Glycerine** in drachm doses is useful in dyspepsia, and in summer diarrhœa of children.

EAR (Diseases of). *J. Dundas Grant, M.D., F.R.C.S.*

I.—PATHOLOGY.

Pathological Changes in the External "Attic" of the Tympanic Cavity.—It will be remembered that the tympanic cavity extends in the upward direction for some distance above the level of the visible membrana tympani and of the tensor tympani tendon. This space, containing the head of the malleus and a portion of the incus, is called the "attic," and the diseases occurring in the external portion of this attic (*Fig.* 31). bounded between these ossicles and the membrane of Shrapnell, have been described by Politzer.

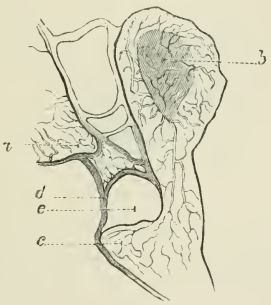

Fig. 31.

Transverse vertical section through the upper part of the malleus and innermost part of the roof of the meatus (much magnified).

a. "Wall" described by Gellé.
b. Head of malleus.
c. Short process of malleus.
d. Shrapnell's membrane.
e. External "attic" (Politzer). Prussak's space.

He has found: (1,) Accumulations of serum, or masses of mucus; (2,) Proliferation of connective tissue; (3,) Adhesion of the membrane of Shrapnell to the neck of the malleus. (It is obvious that these conditions interfere with the mobility of the ossicles and consequently affect the hearing); (4,) Globules of pus in acute inflammation; (5,) Proliferation of round cells—remains of the embryonic connective tissue found normally in this space in the new-born subject; (6,) Perforation of the membrane of Shrapnell; (7,) Formation of polypi

which force their way through the membrane of Shrapnell; (8,) Formation of cholesteatomatous masses in the external attic is found with relative frequency in cases of perforation in Shrapnell's membrane; (9,) Destructive caries of the upper margin of the tympanic ring. (These latter conditions may be accountable for the obstinacy of many cases of chronic otorrhœa, and call for special treatment inasmuch as being in a cavity separated off from the rest of the tympanum their seat is not reached by applications made to the tympanic cavity in general.)

In simple perforation of Shrapnell's membrane the attic must be washed out with antiseptic lotions (**Resorcin**, 3 per cent., or **Corrosive**

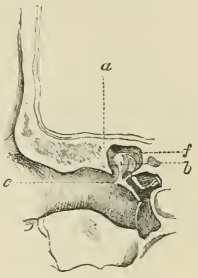

Fig. 32.

Transverse vertical section of the osseous meatus and tympanum.

a. "Wall" described by Gellé.
b. Head of malleus.
c. Short process of malleus.
f. "Attic" of tympanum.

Sublimate, 1 in 2,000) till all fœtor has gone, after which drops of alcoholic solution of **Boracic Acid** (1·05 : 20), or some **Iodol**, rarely, a 1 in 10 solution of **Nitrate of Silver** or minute bougies of **Iodoform** may be used.

If treatment is still resisted the cavity must be carefully explored by means of a suitable bent probe for evidence of caries of the ossicles. Politzer would not remove the malleus unless caries was positively detected, or when so little of it remained as to be functionally useless.

Roughness of the margin of the tympanic ring is treated by scraping with suitable sharp spoons, and the same instruments must be employed for the removal of polypi and granulations. Cholesteatomatous masses may be cleared out by means of cutting spoons, or by the intro-

duction of a cannula through the perforation, with the effect of causing to disappear at once "the pains, vertigo, headaches," in a word, all the distressing symptoms which ordinarily accompany formations.

The Lesions of the Wall of the Attic containing the Auditory Ossicles. Gellé (ibid.).—The interest and importance of lesions situated in this same portion of the tympanum are signalized by the study given them independently by Gellé (Paris). The "thin lamella of compact tissue which forms the termination of the osseous meatus at the level of the superior pole of the tympanic frame" is subject to diseases giving rise to special symptoms.

(1,) It may be covered with scales or crusts from an affection of its cutaneous covering, and these may conceal the openings of old-standing fistulæ.

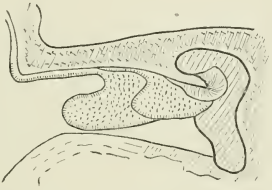

Fig. 33.

Diagrammatic section (vertical transverse) of the meatus and tympanum to show the position of the inflammatory new growth in cases of osteo-periostitis of the "wall" described by Gellé.

(2,) Periostitis causing severe pain may have its seat here as shown by the redness and swelling at this spot, and, in particular, Gellé has remarked this region as especially liable to be affected in syphilis. The swelling produced accompanying this periostitis may strip off the covering of the roof of the meatus, so as to make it conceal the membrane entirely, to occlude the meatus and to simulate a polypus. (The danger of attempting to remove such a swelling in mistake for a polypus is obvious.—Ed.)

(3,) Osseous lesions in the form of exostoses are found here, and in gouty persons sometimes appear comparable to two small grains suspended above the short process of the malleus. Caries is also common as a cause of obstinacy in some old-standing cases of otorrhœa. In the latter class of cases it may be noted that inflation by means of Politzer's or Valsalva's methods is not usually accompanied by the discharge of pus and air which is characteristic of ordinary suppuration of the middle-ear.

Gellé inculcates the advisability of remembering the probability of an hereditary or acquired syphilitic dyscrasia in cases of disease of the "wall" not yielding to non-specific treatment.

Cholesteatoma of the Middle Ear.—An accumulation of desquamated epithelium undergoing fatty degeneration and associated with a quantity of cholestrine is a frequent and dangerous result of chronic inflammation of the cavities of the ear. The accumulation takes the form of a tumour made up of layers of epithelium which can often be separated like the layers in an onion. The tumour adapts itself to the shape of the cavity in which it lies, but, in its growth, it may by pressure cause absorption of the bone surrounding it, and so bring about a considerable extension of the cavity.

According to Ludwig Löwe it occurs in every fourth or fifth case of otorrhœa in Berlin, (a proportion far above what we find in London.—Ed.). Löwe frequently noticed what seemed to be a little cerumen, but much more than ordinarily difficult to remove in (usually) the upper and back part of the meatus. After soaking this with oil (sometimes for several weeks) he was able to syringe out an extraordinary mass of epithelial scales (cholesteatoma) such as must have filled the tympanum and antrum. There generally remained behind an irregular cavity lined with granulations presenting carious spots and discharging a foul-smelling fluid.

Kirchner describes the growth as actually penetrating the Haversian canals of the surrounding bone, and accounts thereby for the obstinacy and frequent recurrence after apparently complete removal.

As regards the nature of the growth it is believed by Virchow to be a true heteroplastic neoplasm, but it is generally considered by others, that it is an ingrowth of the epidermis of the meatus extending into the middle-ear through the perforations left by the suppurative inflammation of which the desquamative process is the result.

Bezold points out the frequency of the coexistence of cholesteatoma with perforation of Shrapnell's membrane opening into a cavity separate from the rest of the tympanum.

The history of a case is generally one of obstinate long-standing, fœtid, suppurative, median otitis. Difficulty is experienced in getting the parts cleared, and ultimately this is only achieved after the removal of such large masses of inspissated material as could only be contained in the cavities if expanded much beyond their natural size. (Politzer.)

The removal of these masses may demand a preliminary softening by means of a **Soda Lotion** or a spray of **Carbolized Glycerine**, or (as recommended by Löwe) the continuous use of a cotton-wool **Tampon**

saturated with oil. Thereafter, the removal is proceeded with by the use of forcible syringing. This is greatly facilitated by the adaptation to the ordinary syringe of a pointed soft rubber tube which can be

Fig. 34.

pushed into the depths of the tympanic cavity (*Fig.* 34.) Should the mass be confined to the cavity ("Prussak's space") behind the membrane of Shrapnell, it is necessary to pass through the perforation a small tympanic tube such as Dr. Robertson's (of Newcastle), or some form of Hartmann's cannula (*Fig.* 35) which has the advantage of being adaptable to any form of syringe.

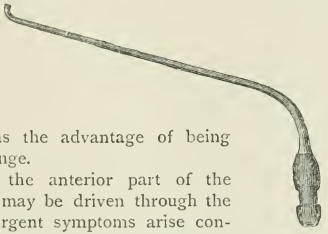

Fig. 35.

To remove masses from the anterior part of the tympanum an alkaline fluid may be driven through the Eustachian tube. Should urgent symptoms arise connected with the mastoid antrum it may be necessary to open that cavity in the classical manner and remove thoroughly its cholesteatomous contents.

[The editor feels strongly the importance of this subject, and though he cannot, from clinical observation, confirm the statement as to the frequency of the affection in ordinary practice, he has hardly seen a single *post-mortem* examination of a case of death from the secondary effects of middle-ear suppuration (cranial abscess, septic thrombosis, etc.) without cholesteatoma being present. From this he would infer that the condition in question is one which threatens life most seriously, and cannot but deserve greater attention than has hitherto been accorded to it.]

II.—Diagnosis

On the Diagnosis of Various Forms of Chronic Deafness without Otorrhœa.—In the "Annual" of 1888, the diagnosis of these affections was treated schematically, and it is proposed here to offer a few additions in amplification of the directions there laid down.

Given a greater or less degree of deafness to sounds conveyed through the air, the question may first be considered: "Have we to deal with an affection of the sound-conducting, or of the sound-perceiving apparatus?"

A deep-pitched tuning-fork (C is advisable) is set vibrating, and is

placed on the mastoid process till it ceases to be heard. It is then held with its blade opposite the meatus, and in the case of an ear with normal conducting apparatus it will be further heard through the meatus—air-conduction. The duration of this further audibility of the given fork must be tested on a number of normal subjects of various ages (it diminishes as age advances), and the normal standard for each age be noted. A fork heard for about fifty seconds longer through the air than through the bones, by a young adult, is a convenient one for use.

(1,) If it is then heard for the normal time—*The conducting apparatus is normal.*

(2,) If only for a shorter time—*The conducting apparatus is slightly diseased.*

(3,) If it is not further heard at all—*The conducting apparatus is considerably diseased.*

In this case it is desirable to set the tuning-fork again vibrating, and after it has ceased to be heard at the meatus, to apply it to the mastoid process; it may be (and in most cases is) further heard by bone-conduction.

This is "Rinne's experiment" which, in the 1st and 2nd cases, is said to be "positive," and in the 3rd "negative" (Rinne +, Rinne −). It would, I hold, be more correct to call the 2nd case as "negative" also, but to depart from the accepted use of the terms would, at present, only lead to confusion in reading reports of its use.

Supposing that we have by this been led to suppose that *the affection is one of the conducting apparatus*, we would be confirmed in the view by the existence of the following conditions: (1,) Abnormal appearance of membrana tympani, imperviousness of the Eustachian tube, etc.; (2,) The hearing worse for low-pitched than for high-pitched sounds; (3,) "Hearing better in a noise"; (4,) The tuning-fork in contact with the skull heard as long—as or longer than—in the case of a normal hearer (bone-conduction ±o or +); (5,) In many cases marked improvement on inflating the middle-ear.

What is the site and nature of the Disease of the Conducting Apparatus?—The results of Politzer's inflation give us the next most important information, if, at the same time, we ausculate by means of the otoscope, as follows:—

(1,) Suppose *Air enters freely.* The nasal passages and Eustachian tubes are at least fairly patent, and the muscles of the Eustachian tubes are in active condition. *If hearing is greatly improved* there is no grave organic disease of the tympanum, but simply mechanical *non-ventilation* from slight catarrh. *If hearing is not improved* there is

adhesive inflammation (sclerosis) of the middle-ear. If Gellé's centripetal pressure (*vide* p. 166) gives a negative result, there is then *Fixation of the stapes.*

(2,) Suppose *Air enters with difficulty, or not at all,* as heard by the otoscope. Then (allowing for awkwardness on the part of patient and of operator) there may be *nasal obstruction* detectable by inspection by causing the patient to breathe through the nostrils, and by post-nasal palpation. In the absence of nasal obstruction the Eustachian catheter should be used, then—If air enters freely, there is *Inactivity of the Palato-tubal muscles.* If air enters as if through a very narrow passage, if at all, there is *Stenosis or Atresia of the Eustachian tubes.*

The condition of inactivity or paresis of the palato-tubal muscles may be further recognized by the comparative inaction of the soft palate when inspected through the mouth while the patient emits the sound *Ah.*

Many of the above points may be conveniently registered in the notes of a case by the following form :—

	RIGHT.		LEFT.	
	PATENCY.	IMPROVEMENT.	PATENCY.	IMPROVEMENT.
Politzer ...				
Catheter ...				

Thus :—

	PATENCY.	IMPROVEMENT.
Politzer	−	+ +
Catheter		

would be noted in simple Eustachian obstruction. Again : —

	PATENCY.	IMPROVEMENT.
Politzer	− −	
Catheter	+	+ +

shows inactivity of the palato-tubal muscles. Lastly :—

	PATENCY.	IMPROVEMENT.
Politzer	+ +	–
Catheter		

as in sclerosis of the middle-ear, fixation of the stapes or "nerve-deafness."

As a good working rule for the *prognosis* in these various cases the following may be adopted :—

Free entrance of air without improvement—most unfavourable.

Imperfect entrance of air without improvement—less unfavourable.

Imperfect entrance of air with improvement—favourable.

Sclerosis of the Middle Ear (Progressive Deafness).—Cholewa, regarding the typical insidious middle-ear sclerosis as a neuropathic affection, dwells upon one of its symptoms, which is valuable both from a diagnostic and prognostic point of view, namely, *anæsthesia of the membrana tympani*. This may be tested by the application of a probe.

[The editor has frequently observed in such cases, an *anæsthesia of the tympanum* to the entrance of air on inflation, that is to say that the patient professed to be absolutely unconscious that the air had "gone to the ear" when the auscultatory sounds rendered it unquestionable that it had actually done so.]

He makes the interesting observation that in cases where the worse of two ears is treated by tenotomy of the tensor tympani, the other ear (not operated on) is frequently benefited by the proceeding, even when no improvement takes place in the ear on which the operation has been performed. (It is interesting to consider this observation in connection with the "binauricular synergy" of Gellé, described on p. 168.)

Eitelberg, in discussing the value of "Rinne's Experiment," states that when in one ear the hearing is much diminished through disease (sclerosis), the other ear (though apparently normal to the tests for the hearing-power by air-conduction and when examined objectively) may give a "negative" Rinne reaction. He ascribes this to a sympathetic co-affection. (This also points to the close association between the two ears, and indicates still further the danger of neglecting a unilateral affection.)

Gellé's Test for the Mobility of the Stapes (Centripetal pressure).—A tuning-fork in vibration is to be placed on the frontal eminence or

mastoid process of the side to be tested. A tube, connected with a "Politzer" air-bag, is then firmly fitted into the meatus. On gentle compression of the air-bag *in a normal ear* the perception of the sound of the tuning-fork diminishes or even disappears, and returns if the pressure be quickly removed. This is accounted for by the mobile stapes being driven in and causing paralyzing pressure on the labyrinthine contents. In disease various departures from this may occur, of which the following are the most striking :—

No change in the sound takes place.—This may be due to ankylosis of the stapes in the fenestra ovalis, or to fixation of the stapes through extreme tension of the tympanic membrane. In the latter case the abnormal condition is relievable by means of the air-douche.

The slightest pressure induces vertigo.—In this case there may be : (1,) Partial indriving of the stapes, the slightest additional pressure being sufficient to induce disturbance ; (2,) Closure of the fenestra rotunda, the labyrinthine fluid receiving the shock of the pressure untempered by the yielding of the membrana secundaria ; (3,) Abnormal irritability of the nerve. This is usually associated with other signs of nervous irritability (menopause, etc.).

Transauricular Auscultation in combination with Gellé's Centripetal Pressure.—For this method of examination it is necessary to have a tube fitted at one end into the patient's ear, while the other end divides into two branches, of which one goes to a Politzer air-bag and

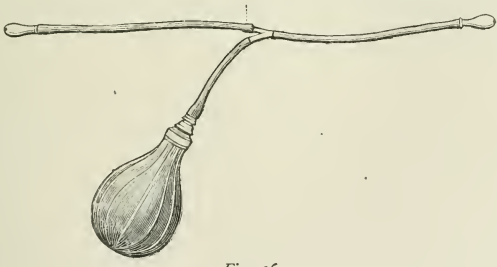

Fig. 36.

Apparatus described by Gellé. The dotted lines indicate the position of a thin diaphragm.

the other to the observer's ear. The latter has across it a diaphragm of gold-beater's skin.

The tubes being thus fitted, a vibrating tuning-fork is placed on the patient's frontal eminence or mastoid process of the side to be tested.

The Politzer bag is then compressed, and *in case of a normal ear* the sound appears less to the patient (owing to the indriving of the stapes) and to the observer (owing to the increased tension of the membrana tympani).

In abnormal conditions varieties occur: (1,) *The sound may not appear less to the observer*—indicating that the tension of the membrane was already at its utmost limit; (2,) *The sound may not appear less to the patient*—indicating the conditions of the stapes described in the preceding paragraph.

Binauricular synergies of Gellé.—In a normal subject if pressure by means of an air-bag is exercised in the meatus of one ear, the sound of a tuning-fork held in front of the *opposite* ear appears feebler or extinct. This is attributed by Gellé to the reflex synergetic action of the accommodative apparatus of the two ears (the centre, oto-spinal, being in the cervical portion of the spinal marrow).

The *absence of this sign* in disease would indicate: (1,) Fixation of the stapes of the side compressed (the patency of the meatus being previously ascertained by inspection); (2,) Disease of the oto-spinal centre (*e.g.*, cervical pachymeningitis).

The *presence of the sign* unimpaired, though accompanied by a greater or less degree of deafness to the tuning-fork in contact with the bones of the head, would indicate—Deafness due to an affection of the nervous apparatus.

[A test requiring, as this does, considerable exercise of intelligence and attention on the part of the patient, necessarily calls for support by means of the various confirmatory signs.—Ed.]

III.—Therapeutics.

Collodion Treatment in cases of Relaxed Membrane.—Keller recommends the use of McKeown's collodion treatment in such cases. (It may be recalled to mind that in many cases of chronic deafness and tinnitus relieved for the moment by inflation and almost instantly as bad again as before, there is found, by means of the pneumatic speculum, that the normal membrana tympani is replaced in more or less of its extent by a thin membrane like gold-beater's skin, which is drawn out for the moment and blown in again under the action of suction and insufflation. This may result from the stretching of the cicatrix following the healing of perforations, or it may result from chronic inflammation and atrophy of the membrane, especially if inflation, *per tubam*, have been excessively employed.)

The method of use is as follows: The patient's head is laid on the opposite side, and immediately after Eustachian inflation, a few drops

of **Collodion** are poured into the ear through an ordinary speculum. Any excess is removed by means of cotton-wool, and the head is left in the same position for a few minutes. If, on inspection, the drum is found not to be completely covered, some more collodion is then applied.

Keller has found no inconvenience follow this procedure. The collodion-layer is allowed to remain for from three to six weeks, in fact, until it loosens itself, when it is removed with forceps.

He finds it efficacious in relieving the symptoms (he quotes a case of extreme sensitiveness to shrill tones, quite relieved), and certainly much easier and safer than the treatment by multiple cauterizations, etc.

Resorcin combined with Cocain in the Local Treatment of Ear Diseases.—The action of resorcin as an unirritating mild antiseptic is well known, and cocain as a local anodyne and vessel contractor, requires no new recommendation. Those, however, who have used the latter in diseases of the ear must frequently have been struck with the remarkable temporary improvement in the objective and subjective condition of the organ when it has been used with a view to its purely anodyne effect. Von Stein claims for it a much wider field of action founded upon Turewitsch's experiments, from which the following conclusions are derived: (1,) Cocain increases the absorbent power of the mucous membranes; (2,) The action of cocain is purely local; (3,) This action goes hand-in-hand with its well-known anæsthetic action; (4,) This action manifests itself more conspicuously on hyperæmic tissues; (5,) Comparatively small doses are sufficient to induce this absorbent action; (6,) This property of cocain depends on the constant occurrence of contraction of the vessels, which is accompanied by a subsequent diminution of the secretion.

The formula used by Von Stein is :—

℞ Resorcin 0·1 gramme (1·5 gr.) (gr. iss)	Aq. Destill. 10·0 grammes (ʒ cl)
Cocain Hydrochlor. 0·2 to 0·5 gramme (gr. iij to vijss)	Misce.

A few drops slightly warmed are instilled into the ear and allowed to remain there for five to fifteen minutes, after which they *must* be removed by means of absorbent cotton-wool. This may be done two or three times a day. In the case of infants it may be done during sleep. He gives a warning against over-heating the cocain drops, founded on Stockmann's observation, that by simply heating with water cocain can be split up into the substances benzoylecgonin and methylalcohol, to the detriment of the absorption-favouring property

In very painful affections there may be added to the foregoing prescription: **Morph. Hydrochlor.**, 0·01 to 0·05 grammes (gr. $\frac{1}{7}$ to $\frac{3}{4}$).

As in some patients the frequent use of ear-drops leads to irritation and eczema of the meatus, the writer applies, each time after their use one of the following ointments :—

℞ Hydrarg. Bichlor. 0·01 gramme (gr. $\frac{1}{7}$)	Lanolini Vaselini āā 5·0 grammes (gr. 75)
℞ Zinc. Oxid. 1·0 gramme (gr. 15) Acid. Borici 0·5 gramme (gr. 7)	Lanolini Vaselini āā 5·0 grammes (gr. 75)
℞ Acid. Borac. 1·0 gramme (gr. 15)	Ung. Diachyli (Hebra) Lanolini āā 5·0 grammes (gr. 75)

He uses it with satisfaction in the following affections :—

(A.) *Ear Diseases without Perforation of the Membrane.*—(1,) Congestion after irritation by an insect or other foreign body; (2,) Acute myringitis; (3,) Acute catarrh of the middle-ear, avoiding the use of inflation till after the disappearance of all acute symptoms; (4,) Congestion and thickening of the membrane after acute catarrh of the middle-ear; (5,) Chronic catarrh of the middle-ear *in the early stage*, especially in children. (In later stages he finds it of little use if instilled into the ear, but beneficial when injected through the Eustachian tube); (6,) Acute suppuration of the middle-ear is not cut short by the drops. Paracentesis of the membrane is necessary, and the drops are not used till all discharge has ceased; (7,) Ecchymoses, or blood-extravasation in the membrane, from a blow on the ear or a scratch.

(B.) *Ear Diseases with Perforated Membrane.*—(1,) Acute suppuration of the middle-ear. If before the perforation takes place this treatment have been used, Von Stein believes that the perforation is always quite small and in the lower quadrants of the membrane. His treatment, then, is to syringe out with **Boracic Lotion**, dry with absorbent wool, and then instil resorcin-cocain drops, drying out again after five to fifteen minutes. He believes that the use of his combination in measles and scarlet fever in good time (that is before acute inflammation makes itself evident) diminishes the amount of probable destruction and the consequent degree of deafness; (2,) Chronic perforative inflammation of the middle-ear. The routine treatment is: (*a*,) Syringe with boracic lotion; (*b*,) Dry out; (*c*,) Instil resorcin-cocain drops; (*d*,) Dry out again; (*e*,) Apply ointment. [We would preface it with an inflation by Politzer's method.—Ed.]

In general, the chief indication for the use of this treatment is the presence of hyperæmic conditions.

Cocain in Diseases of the Ear.—Baumgartner recognizes the value of cocain as an anodyne, an anæsthetic, and as a powerful agent in checking inflammation.

He agrees with Kiesselbach as to its use in diminishing tinnitus and vertigo in many cases, a property attributed by Kiesselbach to its action in diminishing arterial pressure. In cases of tinnitus arising from sclerosis, and in quinine deafness, he finds it useless, but capable of giving relief in some affections of the labyrinth. In some cases of chronic catarrh of the middle-ear he got good results when other plans of treatment failed. A few drops of a 5 per cent. solution are injected through the Eustachian catheter. If no relief is obtained after a few injections (probably at intervals of twenty-four hours.—ED.) no benefit is to be expected.

In acute cases it gives relief, but they do well without it, and in them it is very easy to cause cocain poisoning (giddiness, reeling, headache, vomiting, depression).

A most valuable application of it is its use, in solution, for moistening the ordinary cotton-wool *artificial membrane.* It is unquestionable that the artificial membrane, with this addition, improves hearing very much more than it does without it. [I have frequently verified this.—ED.]

Mobilisation of the Stapes.—Miot gives results from the operation of mechanical loosening of the stapes, which he considers favourable to the more extensive adoption of the process. His conclusions are : (1,) That direct mobilisation of the stapes is the most efficacious method of combating deafness from ankylosis of the stapes ; (2,) It should not be practised until it has been made certain that the means usually employed in the treatment of chronic catarrh of the middle ear are insufficient ; (3,) In many cases, mobilisation of the stapes produces a durable effect as regards audition and tinnitus, but pretty often the result is doubtful and should not be affirmed beforehand ; (4,) There are some cases of very pronounced deafness of very old standing in which it is impossible to predict that there will be any amelioration even of very slight degree. In such cases, deemed incurable, quite unexpected results may at times be obtained, and the operation should be performed, as there is no other mode of treatment capable of modifying them, the patient being duly warned of the probability of non-success.

The mobilisation may have to be repeated several times at pretty long intervals before a veritable result is obtained.

The operation sometimes reacts advantageously on untouched ear (compare Cholewa's views, page 166). If sufficient antiseptic

precautions are taken there is no danger to life, and never any suppuration.

The most favourable cases are: (1,) Deafness subsequent to suppurative inflammation of the middle ear, with persistent perforation of the membrane, not improved by the artificial drum; (2,) Deafness, with little or no thickening of the membrane, without paracusis Willisii (hearing better in a noise), with preservation or diminution of "bone-conduction" for the watch, with tinnitus; (3,) Deafness, with the drum more or less thickened, with paracusis, with diminution of "bone-conduction," and with tinnitus.

In the	first	class	Miot	got	28	good results out of	36 cases.
,,	second	,,	,,		14	,, ,,	32 ,,
,,	third	,,	,,		18	,, ,,	24 ,,
	Total				60	,, ,,	92 ,,

Moure divides the cases in which mobilisation of the stapes is practicable into two classes: (1,) Those in which the rigidity of the stapedio-vestibular joint is the result of dry chronic middle-ear catarrh; (2,) Lesions of the stapedio-vestibular joint are consecutive to otorrhœa.

In the former class he considers the operation contra-indicated, believing that, even if at the time an improvement is effected, sooner or later "one finds the tinnitus and deafness reappear as intensely or even more so than before." [Knowing what we do of the progressive character of chronic dry (sclerotic) catarrh of the middle-ear, we are disposed to take the same view.—Ed.]

In the second group, however, corresponding to Miot's first group, the operation is strongly indicated as giving "immediate excellent results which are almost always definitive." There being already a perforation of the membrane, a fenestra rotunda presumably intact, and the stapes almost dissected out, the manipulation can be performed with facility, and, when we consider that we are dealing with a pathological relic, not with a progressive process, the probability of a good result is intelligible.

The operation is performed through an incision in the postero-superior quadrant of the membrane (unless there is already a perforation in this region) close to the circumference. A flattened probe is then introduced, and its point applied with the flat surface below the stapes. It is then gently used as a lever—with the speculum as a fulcrum—so as to press the stapes upwards. Should this fail to move the bone, the probe should then be applied with its flat surface against the anterior aspect of the descending (long) process of the incus, and an antero-posterior pressure exercised.

In cases of chronic suppuration there are often small bands attached to the stapes, which may have to be divided in order to render the bone mobile.

Miot's method of employing local anæsthesia and antisepsis in operating on the intact membrane is fully detailed in his description of the operation *(op. cit.)*.

The day before the operation the meatus and membrane are well washed by means of a small pledget of boracic wool dipped in a 1 per 1000 solution of corrosive sublimate, and the meatus is then plugged with boracic and iodoform wool. The instruments are washed in carbolized alcohol (1 in 10), dried with a carbolized cloth, and placed on a towel wetted with a concentrated alcoholic solution of carbolic acid. The operator's hands are washed with carbolic soap in a 1 per 500 corrosive sublimate solution. For local anæsthesia, a 1 in 5 solution of cocain (hydrochlorate) is applied (on cotton-wool for fifteen minutes.—Ed.). After a small puncture is made in the membrane the cocain is again applied so as to thoroughly impregnate the lips of the wound, which is later enlarged to the required extent.

In case of unusual hæmorrhage from the incision he finds it sufficient to mop up with a little antiseptic wool, and impregnate the wound with a solution consisting of 2 parts of cocain (hydrochlorate), 1 of boracic acid, and 16 of water. After the operation the wound is well washed with a 1 per 1000 solution of corrosive sublimate (taking care to leave the flat of membrane turned outwards). A small pledget of boracic wool, powdered with iodoform (1 part) and boracic acid (2 parts), is then pushed into the meatus, which is filled up with the simple boracic wool.

The dressing is repeated next day (or the same if soaked with blood), and then at longer intervals.

Miot considers that this antiseptic method obviates all tendency to suppuration (a point of great importance in view of the possibility, however slight, of opening the labyrinth.—Ed.).

References.—Politzer, "Comptes Rendus du Congrès International d'Otologie et de Laryngologie," Paris, 1889 (Steinheil); Gellé, Ibid.; Löwe, "Monat. für Ohrenheilk.," Aug., 1890; Kirchner, Ibid., Oct., 1890; Bezold, Ibid., Sep., 1890; Politzer, Ibid., Oct., 1890; Cholewa, "Archiv. of Otol," p. 154, 1890; Eitelberg, "Wien. Med. Woch.," Nos. 20, 24, 27, and 29, 1889; Gellé, "De l'Oreille," Paris, 1888; Keller, "Monat. für Ohrenheilk.," No. 1, 1890; Von Stein, Ibid., Nos. 3 and 4, 1890; Stockmann, "Brit. Med. Jour.," vol. i., p. 1043, 1889; Beaumgartner, "Monat. für Ohrenheilk.," No. 2, 1890; Kiesselbach, Ibid., No. 9, 1889; Miot, "De la Mobilisation de l'Etrier," Paris,

1890 (Doin); Moure, "Comptes rendus du Congrès Internat. d'Otol. et de Laryngol.," Paris, 1889 (Steinheil).

Synopsis.—(Vol. 1889, p. 239.) For furuncles of external meatus application of **Cocaine** 10% solution in absolute alcohol, also solution of **Boracic Acid** in alcohol. To mature furuncles and prevent recurrence, **Calcium Sulphide**, gr. $\frac{1}{6}$ in pill thrice daily. For chronic purulent inflammation of middle ear, levigated **Boracic Acid** sterilized (by heating on platinum foil if used alone), or mixed with a tenth part of **Iodol**. If perforations are very small, a solution of **Boroglyceride, Carbolic Acid,** or **Peroxide of Hydrogen**; Inflamed bone should be treated with dilute **Nitric** or **Carbolic Acid.** If discharge is thin and easily absorbed, plug with cotton wool antiseptic ised with **Corrosive Sublimate** after syringing and inflating. For covering chronic perforation, **Photoxylin** used after washing out with **Boric Acid** solution. For nerve deafness due to labyrinthine disease, **Pilocarpine**, gr. $\frac{1}{12}$ gradually increased to gr. $\frac{1}{3}$ hypodermically. For catarrhal deafness, **Calcium Sulphide**, gr. $\frac{1}{10}$ to $\frac{1}{3}$ (p. 28).

(Vol. 1890, p. 242.) For furuncles of external meatus, apply 20% solution of **Menthol** on cotton wool, renewing it every twenty-four hours, or a super-saturated solution of **Boric Acid** in **Alcohol** may be used; **Cocaine** is a useful palliative. To close old perforations: After the discharge is stopped, cover the aperture with egg-shell membrane, and dab this next day with a cotton-wool tampon impregnated with **Oil of Turpentine, Antiseptic Cotton Wool,** or a small piece of thin celloidin may be used as artificial membranes. For hyperæmia of the tympanum, the instillation every two hours of a 10% solution of **Carbolic Acid** in **Glycerine** has given relief and prevented suppuration. For otalgia nervosa, **Antipyrin**, gr. xv, taken at once and followed by half the dose in two hours if the pain is still present.

ECZEMA. *W. Allan Jamieson, M.D.*

Lassar recommends the following treatment in moist or purulent eczema in children: The infant should be bathed as in health, then all bleeding or lymphorrhagical stomata, or open spots are to be touched with a 3 per cent. solution of **Nitrate of Silver**; the whole body is then covered with his **Salicylic Vaseline Starch Paste**, the face, head, and joints smeared with 2 per cent. salicylic vaseline, and bandaged with muslin so carefully that no struggling can move them. The fretful, unhappy little creature will become a clean and laughing being within a shorter space of time than under any other mode of procedure hitherto known.

Bulkley remarks that in certain cases of eczema in infants, the effect produced by a thorough and continuous use of a **Zinc Ointment** containing 20 minims of **Ichthyol** and 15 or 20 gr. of **Salicylic Acid** is most excellent, and is undoubtedly much greater than from either the zinc ointment alone or when combined with the salicylic acid. As an excipient he still prefers cold cream, the "Ceratum Galeni."

Saalfeld of Berlin gives the following directions for the management of eczema in children: Eczema intertrigo about the genital and anal region is especially frequent in fat children, and is usually associated with digestive disturbances demanding the regulation of the diet before

anything else. Locally the most grateful and healing application is composed of equal parts of a 5 per cent. solution of **Boric Acid** and **Lead Water** applied on pieces of muslin or linen, and changed every time the diapers are changed. The acute inflammation usually ceases at the end of the second day, when a 5 per cent. ointment of **Boric Acid** in **Vaseline** should be substituted for the lotion, painted on with a brush, and then covered with the ointment spread on a cloth. If there is a good deal of moisture present, the parts should be powdered with **Talc**, or equal parts of **Talc** and **Zinc Oxide**, and covered with cotton powdered full of the powder. The diapers should be changed frequently, and the old powder, if wet and caked, removed before new powder is applied. In fat children with eczema of the head the supply of fat in the food must be lessened, the frequency of nursing being reduced. If constipation is present, small doses of **Calomel** may be given, or resort had to the soap suppository. Locally all crusts are to be removed by soaking in oil, this being frequently renewed to prevent its becoming rancid, and removed with soap and water. If much exudation is present, **Lassar's Paste**, with **Boric Acid** 5 per cent., or the **Benzoated Oxide of Zinc Ointment** may be used. If there is not much exudation, a simple 5 to 10 per cent. **Boric Acid Ointment** will do well. If the squamous stage presents, then an ointment of 15 gr. of **White Precipitate**, 65 gr. of **Balsam of Peru**, and 1 oz. of **Zinc-Oxide Ointment** will soon complete the cure. The skull-cap of linen is a necessary adjunct to this treatment. It is well to bind up the hands to prevent scratching. In general eczemas of strumous children either **Phosphorus** in cod-liver oil or **Arsenic** must be administered. In all cases of general eczema the body must be smeared with **Vaseline**, powdered thickly, and covered with a fine linen shirt. The procedure is to be repeated four or five times daily. Upon the limbs a bandage may be substituted for the shirt. Water must be kept away from all eczematous skins.

Unna has found **Calcium Chloride** very useful in dry harsh conditions of the skin, such as are met with in very chronic eczema. Its action is explained by its well-known hygroscopic qualities, which serve to keep the upper skin moist and soft. A 33 per cent. solution is mixed with ointments and pastes to form "cold creams," with which almost all drugs can be incorporated. The following is a specimen of such a paste, suitable for a very chronic infiltrated example of eczema :—

℞	Zinci Oxidi	4·0	Calcii Chloridi	2·0
	Olei Cadini	4·0	Aquæ Destillatæ	20·0
	Terræ Silicea	8·0	Vaselini	26·0

Solvantur et misceantur ut fiat pasta.

In inveterate eczema of the anus, scrotum, and vulva, Unna advises the use of Paquelin's **Thermo-cautery** under the following circumstances: Should the disease persist in spite of well-devised measures, should there be increase of connective tissue and epithelial overgrowth, so that the parts acquire a horny or warty aspect; in such cases the deliberate application of the broad cautery, so as to induce a burn of the second degree is recommended. General or local anæsthesia is needed. The after treatment consists of moist compresses or pastes. As lotions a 5 per cent. **Borax Lotion,** or a 2 per cent. **Resorcin** one are suitable; or the following paste :—

℞	Olei Lini.	Cretæ Præparatæ	ana 25·0
	Liq. Calcis	Iodoformi	5·0—10·0
	Zinci Oxidi		

In this way cases which have caused indescribable annoyance for years have been quite cured in fourteen days.

Professor Pick the introducer of the gelatine preparations, subsequently modified and improved by Unna, thus describes his mode of treating eczema: In general terms, eczema may be said to exhibit the following stages, the *papular*, *vesicular*, *red-oozing*, as those of advance; the *scaly*, as that of commencing retrogression. The so-called impetiginous or pustular stage, is due to the deposition of micro-organisms which determine the transformation into pus of the exudation. It is therefore a septic complication. There are two indications which we must satisfy in treating an eczema,—we must protect the diseased portion of skin from external influences, and by suitable **Antiseptic** measures we must prevent any local infection. For the moist stages of acute eczema he uses his **Salicylic Soap** plaster, for the dry his **Sublimate Gelatine.** The formula for the plaster is either :—

℞	Empl. Saponat. Liquefact. 100·0	Acid. Salicylic.	5.0

Or

℞	Empl. Salicylic. Liquefact. 80.0	Olei Olivarum	20·0
		Acid. Salicylic.	2·5

when a more adhesive and weaker plaster is indicated. Both are to be spread thickly on calico. The plaster cut into strips is firmly applied to the diseased parts, and may remain undisturbed for some days. The patient complains of burning pain soon after the plaster has been laid on; this shortly passes off, and is all the more readily borne, because with the application of the plaster the vexatious itchiness disappears. The first dressing must be changed on the third or fourth day should the discharge be abundant; any subsequent one may remain for eight days or longer undisturbed. In his out-patient

department he frequently finds that those of the poorer classes who live some distance from Prague, sometimes do not return for a fortnight or three weeks; and a second application is not needed. As a rule, the dressing need not be changed till the annoying itching has re-asserted itself, and this at each dressing is longer and longer of re-appearing. This plan suits widely diffused eczemas, and he has never seen any evidence of absorption, as is so apt to occur when, under similar circumstances, carbolic or sublimate dressings are applied. When in this manner, the scaly stage has been reached, the time for the **Gelatine** has come, the formula for which runs as follows:—

℞ Gelatina Alba 30·0 | Aq. Destillat. quant. suff.

Macera per aliquot horas, deinde liquefac. in balneo aqua, et evapora ad pondus 75·0. Adde:—

℞ Glycerini 27·0 | Hyd. Perchloridi 0·25

Antea in pauxillo aqua solut. Effunde in forma disci.

This **Gelatine** dressing is so elastic that on the face the movements of expression are not interfered with, while it is quite transparent.

Mr. Jonathan Hutchinson says, that were he required to name one remedy only for eczema, he would choose **Tar**; if allowed to choose two, **Tar** and **Lead**; and if three, **Tar, Lead,** and **Mercury.** Yet for a disease which presents so many phases and varieties, both in kind and stage, as does eczema, it may seem almost absurd to speak of single remedies. The chief reason which prevents tar from holding its proper place in the treatment of eczema, is, that it is commonly used too strong. If weak enough, and used freely enough, **Tar Solution** will, in his experience, almost invariably cure eczema. While he admits the value of **Tar-water** and **Carbolic Acid,** he regards as most certain and convenient the solution of coal tar known as **Liquor Carbonis Detergens.** A tea-spoonful to a pint of water is a common strength, but he often prescribes it in a much more dilute form. It should be so weak that it does not cause smarting, and it should then be employed like water. The parts affected should be bathed with it, and rags soaked in it should be laid over them, and frequently re-wetted from the outside. On no account should oiled silk be used, it soddens the part and spreads the eczema. Eczematous inflammation is usually, according to his creed, a local and self-infecting disorder. It begins in a predisposed and irritable skin by some local excitement, and it prospers under the laws of self-contagion. In most cases the state of the blood has little to do with it. It cannot usually be cured by internal remedies alone, whereas in nine cases out of ten, it may be cured by local treatment, without any alteration in the patient's diet, or any use of internal drugs. In eczema he, however, recommends

the avoidance of sugar, fruit, and milk; very often salines should be given, and in acute cases **Tartarized Antimony.** Weak **Tar** lotions may be used for eczema without regard to stage in many instances. In a few cases, however, if very acute inflammation, it is preferable to use a **Lead** lotion for a few days, and to add tar only when the congestion is a little abated. The cases are, however, very few in which he omits the tar, even at the beginning. Very often indeed, the lotion consists of **Liquor Carbonis** and **Liquor Plumbi Diacetatis**, in equal proportions, diluted as above indicated. Arsenic rarely does any good in eczema, and often irritates. Weak **Sulphur Baths** as at Harrowgate and Aix-la-Chapelle, often cure chronic cases, chiefly those of dry eczema; but severe cases have been known not only to remain uncured, but have apparently been made worse at both places.

Unna points out that till quite recently eczema was regarded as occasioned either by internal disorders or by external irritants; it is now becoming more evident that in the greater number of cases we have to do with a parasitic affection. There are already, he states, a variety of types of eczema differentiated, and it may be expected that for each a special form of cutaneous parasite will shortly be discovered. In future, in his opinion, the conception of an eczema will be solely that of a parasitic catarrh of the skin. This will simplify the treatment. One of the best known and most widely diffused of such types is seborrhœic eczema, and this in individual cases can be cured by **Sulphur, Resorcin, Chrysarobin,** or **Pyrogallic Acid**. Of these **Resorcin** causes least of all any local or constitutional secondary effects. There is no stage, no part of the body, no individual condition of skin, no age, no complication, of seborrhœic eczema which some mode of using resorcin will not be found to suit. The sole contraindication is the rare resorcin idiosyncrasy. This he has only met with ten times in two thousand cases treated with resorcin. When this manifests itself, the resorcin must be discontinued, else the skin becomes painful and swells, and if the remedy is still persisted in large blisters form, and the œdema may spread from the point of application over the whole body. There is one way of employing resorcin which combines intensity of action and certainty of result, with great simplicity of application. He prescribes :—

℞ Resorcin		Sp. Vini Rectificati	180·0
Glycerini	ana 10·0		

This is diluted when used, with four times as much water. A thin layer of cotton wool is dipped in this lotion, applied to the part, covered with some impermeable material, as gutta percha tissue, oiled silk, or oiled paper, and secured with a bandage. Under this treat-

ment the horny layer swells, and if the dressing is discontinued during the day, some oily material must be smeared on. For this purpose he suggests his **Zinc Oxide** salve pencils. Dreckmann of Recklinghausen adds his testimony to the value of this mode of treating eczema. He says, however, that it is best, when treating moist eczema, particularly of the head, such as is so often met with in children, to continue the **Resorcin** compresses only for a short time, till in fact the weeping has ceased. If the resorcin is continued too long an excessive and deep cornification of the epidermic cells occurs, leading to great dryness and brittleness of the skin. This is not perceptible while the compress is worn, but makes itself manifest after an unpleasant fashion when this is discontinued. Thus, mild **Lead, Zinc,** or **Sulphur** applications are subsequently preferable. Hyperplastic and elephantiasislike thickenings of the skin in consequence of chronic eczema, as are met with frequently on the scrotum; resolve under the **Resorcin** compresses very rapidly, but only up to a certain point. The cure comes to a standstill, and the resorcin must be laid aside and other remedies resorted to. He quotes an instance of the converse, in which resorcin thus employed effected a cure after the failure of the more ordinary methods.

Dr. Macintosh regards it as essential that in the acute stage of eczema the parts are not to be washed at all. In cases where the head and face are attacked, the corners of the eyes and angles of the mouth, may be touched gently with a small piece of soft sponge, made damp with cold water, and immediately dabbed dry. The unaffected parts may of course be washed with tepid water as much as may be needed. Another point on which he insists very strongly is, that the bowels be kept freely open. **Sulphate of Magnesia** he considers by far the best of all purgatives. Where there is torpidity of the liver, a combination of **Cascara** with **Nux Vomica** is equal, if not superior, to any other :—

℞ Ext. Cascaræ Sagradæ Liq.	ʒiijss	Glycerini	ʒiij
Tincturæ Nucis Vomicæ	ʒj	Infusum Gentianæ Co. ad	ʒviij

Sig.—Take 1 ounce every evening directly before dinner, or morning and evening if required.

Appropriate external treatment is, however, the great desideratum. Dr. Mackintosh gives the following as an ointment, which in most cases pretty nearly approaches the character of a specific :—

℞ Bismuthi Subnitratis	ʒiv	Acidi Carbolici Liquidi	ʒss
Zinci Oxidi	ʒj	Vaselini Albi	ʒij
		Ft. ung.	

Or

℞ Bismuthi Subnitratis	ʒij	Acidi Carbolici Liquidi	♏xx
Zinci Oxidi	ʒss	Vaselini Albi	ʒvj
Glycerini (Price's)	ʒjss	Ft. ung.	

The latter ointment mixes into a beautiful enamel-like cream, which is cooling, and acts as a balm to the irritable skin.

When constant tingling and irritation disturb the patient's rest at night, this lotion is said to be invaluable :—

R Bismuthi Subnitratis	℥j	Acidi Carbolici Liquidi	♏xij
Glycerini (Price's)	℥iv	Aquam Rosæ	ad ℥j

Sig.—Shake up, and apply with a camel's hair pencil.

During the day, when business has to be attended to, and the ointment cannot be applied, a powder will be found useful :—

R Cimolite	Zinci Oxidi āā partes æquales.
Bismuthi Subnitratis	Fiat pulvis.

In more chronic cases the famous **Unguentum Metallorum** still holds its own. It consists of :—

R Unguenti Zinci	Ung. Hydrar. Nitratis āā part. æqual.
Ung. Plumbi Acetatis	Misce.

This ointment may be varied by substituting **White Precipitate** for the **Nitrate of Mercury** ointment.

The treatment of eczema in "elderly people," by which term he refers to those who have reached the age of sixty, is thus described by Dr. Bulkley : The chief elements of causation seem to be a debility of tissue, rendering it everywhere prone to take on inflammatory or degenerative action, and as an early or internal cause, a certain faulty kidney action. The urine is apt to be scanty, the specific gravity high, and the urates deposited in excess. It is also not uncommon to find sugar, which may be a transient condition and removable by treatment. In the same way deficient action of the bowels is not infrequent. The eruption often varies with the activity or otherwise of these functions. At the beginning of treatment, and occasionally during its progress, nothing gives more relief to the system and the eruption than a pill of blue mass, **Colocynth**, and **Ipecacuanha**. For more constant use, one of **Aloes** and **Iron** before each meal, as required. To remove the defective kidney disorder, **Acetate of Potass**, in doses of 10 to 15 gr., after meals, with **Nux Vomica** in a bitter infusion, as of **Quassia**, suits admirably, and under its use the eruption diminishes. **Iron** must be taken sparingly, though it may be given for a time after a course of the above. **Arsenic** is only of use should a bullous or pemphigoid eruption supervene, then it must be given freely and at short intervals. Sedatives are often of the greatest assistance, and are frequently required to secure proper rest at night. **Phenacetin** in 5 grain doses, taken with hot water on retiring, frequently acts well, the dose being repeated in an hour if necessary. **Antifebrin** in 6 grain doses, similarly used, is also often of service.

Tincture of Gelsemium, 10 to 20 drops, with 1 of **Tincture of Aconite**, will secure perfect rest in many cases, even when itching is so severe as to prevent sleep. It may be repeated in an hour. In general the eczema patient is better without any alcohol, unless for a time, in small quantity in those long habituated to the use of stimulants. In those who are taking less and less exercise, the diet should be correspondingly diminished. For generalized eczema, and that on the trunk and limbs, nothing is more comfortable than the well-known **Calamine** and **Zinc** lotion, to which a little **Carbolic Acid** and some **Liquor Calcis** have been added. When more astringency is called for, 2 to 4 drachms of the **Salicylate of Soda** may be added to each 8 ounces of the lotion. These are sopped on several times a day, care being taken to avoid chill, and on any oozing point a film of absorbent cotton may be laid, and allowed spontaneously to separate. On more localized patches with thickening of tissue and much itching, complete relief can generally be obtained by the use of **Tar** and **Zinc** ointment:—

℞ Zinci Oxidi	ʒj	Cerati Galeni	ʒjss.
Ung. Picis	ʒiv		

This should be thickly spread on the woolly side of lint, cut to fit the individual patches, and firmly secured with a cheese-cloth bandage, being changed once or twice a day. When the thickening resists the tarry application, a ¼ part of **Diachylon** ointment may be added to the above. If still rebellious, 10 to 20 grains of **Salicylic Acid** to the ounce. In eczema of the head and face the most serviceable application is a **Tannin** and **Carbolic Acid** ointment, kept continuously applied.

℞ Acidi Tannici	ʒj	Cerati Galeni	ʒj
Acidi Carbolici	grs. v – x		

Washing must often be completely abandoned, even for weeks, the parts being merely wiped with a soft, dry cloth. If cleansing or stimulation is absolutely needed, nothing is better than the **Sapo Mollis** of the Pharmacopœia, but this must be used lightly, diluted with water, the part dried quickly, and the appropriate dressing at once employed. Soda soaps, on the contrary, generally irritate an inflamed and tender skin. Baths are seldom advisable. If taken gelatin or starch is to be added to the tepid water, and the immersion neither to be too prolonged or repeated too frequently; several days between each should elapse.

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Surg.," Nov. 2, 1889; "Monats. f. Prakt. Derm.," July 1889, and May, 1890; "Practitioner," July, 1889.

Synopsis.—(Vol. 1889, p. 242.) In children with constipation, Hyd. ℂ Cret. in small doses every other night. If catarrh of bowels exist, ℞ Sod. Bicarb. grs. v, Sp. Chloroformi, ♏j, Aq. Anethi, ʒj, M. for a child one year old (Crocker). In gouty cases give **Alkalies** and **Salines.** For strumous children use **Ol. Morrh., Syr. Ferr., Iodidi,** or **Parrish's Food.** In general debility, **Quinine, Ol. Morrh., Nux Vomica, Mineral Acids,** or **Arsenic**; ℞ Vin. Ant. Tart, ♏v t.d. useful in acute attacks, patients being robust (Morris); ℞ Sp. Terebinth, ♏x thrice daily in mucilage, after meals, the last dose not to be taken later than 6 p.m. (Crocker). In obstinate cases counter-irritation by **Dry Heat, Mustard Leaves,** or **Liq. Epispasticus** (applied to nape of neck for upper part of body, and over lumbar region if lower part be affected); ℞ Pot. Acetat., ʒiv, Tinct. Nuc. Vom., ʒij, Tinct. Cinchon. Co. ad ʒiv, M. A teaspoonful in a wineglassful of water thrice daily after meals (Bulkley). In chronic eczema with impaired appetite and coated tongue, ℞ Mag. Carb., Bismuth Carb. āā ʒijss, Tinc. Rhei, ʒiss to ʒij, Syr. Zingib., ʒvj., Sp. Chloroformi, ʒij, Aq. ad ʒviij, M. A tablespoonful in water thrice daily (Jamieson); When pliancy and unctuousness of the skin are absent, **Pilocarpine Nitrate,** gr. ⅛ to ¼ given twice daily hypodermically (Jamieson); ℞ Mag. Sulph., ʒj, Ferri Sulph., ʒss, Ac. Sulph. dil, ʒiss, Aq. Chloroformi, ʒvj, M. A tablespoonful thrice daily; useful in many cases of eczema. *Locally:* Avoid washing if possible. Unna's soap is best. Remove crusts by soaking in oil, and poulticing, or by indiarubber appliance, *e.g.*, gloves or skull cap. ℞ Ac. Salicylic, 3·0, Talci, 87·0, Pulv. Amyli, 10·0, M. As dusting powder in acute stage with little secretion (Martindale). To allay itching, ℞ Ac. Carbol., ʒj, Glycerin, Pur., ʒij, Aq. ad ʒviij, M. ℞ Lot. Nigræ, Liq. Calcis āā ʒiv, Mucil. Tragac., ʒj, M. or, ℞ Zinci. Carb., ʒj, Ac. Salicyl., gr. x, Vasel. Opt., ʒj, Cerat. Galeni ad ʒj, M. (Jamieson). **Ichthyol** as ointment or solution from 5 to 50% (Unna). ℞ Ac. Salicyl., gr. x, Vaselin. Opt, ʒss, Zinci Ox., ʒij, Pulv. Amyli, ʒij, M. Ft. Pasta (Lassar). Unna's **Glycerine Jelly,** ℞ Gelat., 15·0, Zinci Ox, 10·0, Glycerini, 30·0, Ac. 40.0; melt cautiously and combine, adding 2% **Ammonia Sulphoichthyolate**; paint this over the part and cover with thin film of absorbent wool (Jamieson). In seborrhœal eczema, Unna gives **Sulphur**; ℞ Resorcin, ʒss, Glycer, q.s. ad ʒiv, M. (Schmitz). In pustular eczema of head in children, **Iodoform** or **Iodol,** grs. v to **Lard** or **Vaseline,** ʒj, and in about a week, **Zinc Oleate, Plumb. Oleate,** or **Boracic Acid** may be substituted for Iodoform; for eczema of face the same may be used, applied under a mask; For eczema of eyelids **Ung. Hyd. Nitrat.,** 1 in 8. Anderson uses **Potassæ Fusa,** grs. x, to water ʒj. brushing it on the everted lid, and in a few seconds brushing with weak **Acetic Acid** solution; ℞ Liq. Plumb. Subacet, ♏xv, Vaselin. Alb., ʒj, M. for eczema of lips. For eczema of beard, soothing remedies in acute stage, and then **Hyd. Oleat.,** 1 or 2%, or **Ung. Sulph.,** grs, x or xx to ʒj. To remove thickened epidermis in eczema of palms, apply **Pancreatic Emulsion** on lint constantly or **Papain** (Morris), and then use **Ac. Salicyl.,** grs. v. or x to ʒj. For eczema of vulva (examine urine for sugar), **Lead** and **Liq. Carb. Detergens** as lotion.

(Vol. 1890, p. 248.) ℞ Anhydrous Lanolin 65·0, Liquid Paraffin 30·0, Ceresin 5·0. Melt together and beat or knead in Water 30·0; this forms a base for ointments, being unirritating and cannot become rancid. In acute eczema, ℞ Bismuthi Subnit. ʒiv, Zinci Ox. ʒj, Ac. Carbolic Liq. ʒss, Vaselini Alb. ʒij, M. ℞ Bismuthi Subnit. ʒij, Zinci Oxid. ʒss, Glycerini (Price) ʒiss,

Ac. Carbolic Liq. ♏xx, Vaselini Alb. ʒvj, M. In obstinate cases in young children should Lassar's paste not cure, apply compresses of a weak **Nitrate of Silver** solution, 1 to 500, for two or three hours night and morning, and a soothing ointment, *e.g.*, **Ung. Vaselini Plumb.**, during the day and at night. For eczema of anus and genitals, use hot sitz baths rendered very soapy, and then apply, ℞ Oleate of Cocaine 1 part, Olive Oil 2 parts, Lanolin 10 parts, M. To be used twice daily. When eczema is associated with dentition the gums may be rubbed with the following, ℞ Glycerin ♏160, Distilled Water ♏160, Bromide of Potassium gr. xv, Cocaine gr. vijss; and if sleep is disturbed give **Bromide of Potassium** internally, and an ointment of **Vaseline** and **Oxide of Zinc** externally. If eczema begin on scalp and spread to face and neck, cut the hair, wash well with soap, and wash face with warm water and milk to remove oils, and then apply, ℞ Resorcin 1 part, Zinc Oxide 10 parts, Vaseline 100 parts; or **Sulphur**, 60 to 75 grains, may replace the zinc. In scrofulo-tubercular eczema, wash the surface with Van Swieten's liquid, at first diluted, and then pure, and apply an ointment of **Calomel Vaseline**, 1 to 30. In eczema seborrhœicum, a **Resorcin** and **Salicylic Acid** over-fatty soap gave good results, letting the lather remain on in severe cases and covering the part with gutta-percha tissue.

ECZEMA OF THE TONGUE. (See "Tongue.")

ELECTRICITY IN GYNÆCOLOGY. (See also "Uterus, Diseases of.")

A. D. Rockwell, M.D., New York.

Later experience in the use of bi-polar faradization has well established its claims as an invaluable method, especially in gynecological cases.

Much depends upon the character of the coils of which the helix is made, and the construction of the vibratory attachment, so that the interruptions shall be rapid, even, and devoid of that harshly constricting sensation that irritates rather than soothes. When Duchenne first called the attention of the profession to the remarkable difference in the action of the induced currents of quantity and tension when applied to the rectum, vagina, and bladder, he made use only of the uni-polar method, and was quite in ignorance of the bi-polar method through which are observed phenomena of a far more positive character. Even among those who make considerable use of electricity in medicine, there seems to be a very general ignorance of the physics of induced currents of quantity and tension, and but little appreciation of this interesting and efficient form of electrical application. The bi-polar method is confined almost entirely to the faradic or induced current. The galvanic current can, it is true, be used in this way, but it possesses little, if any, superiority over uni-polar applications, excepting in a limited number of pathological conditions, and one pole of the electrode must necessarily be of platinum. With an electrode of this character, it is especially efficacious in arresting local hæmorrhages, and for the cauterization of ulcers of the cervix.

Bi-polar faradization, on the contrary, has a very wide range of usefulness.

It is well known that all faradic apparatus have at least a primary and secondary coil composed of wires of different lengths and thicknesses, and that the currents from these two coils are quite different both in their physical and physiological activities. These coils are quite distinct from each other, and the apparatus containing them is called the separate coil variety. It is, however, not so well known that the coils for the faradic current, although varying in thickness and length, may be combined in a helix having a practically unbroken continuity, so as to yield a variety of currents that differ in a most extraordinary manner in their physical and therapeutical properties. Such apparatus we speak of as the continuous coil variety, the details in the construction of which it is unnecessary to enter into here. It will be sufficient to say that the currents of quantity from the first two combinations of coils, and the currents of tension from the last two, afford a therapeutic means much in advance of the currents of quantity and tension from the faradic apparatus as ordinarily constructed.

Applied externally the currents of tension act most vigorously, while the currents of quantity overcome with difficulty the resistance of the skin and produce little effect. Applied internally by the bi-polar method, the currents of tension act mildly, cause little or no discomfort, and excite but feeble muscular contractions in the uterus, rectum or vagina. The currents of quantity, however, which when applied externally seem so inefficient, act with a vigour almost incredible when applied internally, either to the bladder, rectum, uterus, or vagina.

We are accustomed to say that the long thin wire yields a current of tension, and the short thick wire a current of quantity, and the more vigorous action of the second helix, when application is made externally, is commonly attributed to its superior tension, but the immediate and astounding change in the physiological effects of the two currents when applied directly to the internal organs of the body cannot be altogether explained in this way. Studying the phenomena of induction as produced by the initial voltaic current alone, without the intervention of magnetic force, Duchenne long ago conclusively proved that the difference in the length and thickness of the wires of the two helices did not alone explain the different action of the two currents on the sensibility. We may say that the currents have elective properties, or properties special to each, but the reciprocal relations between the nervous system and the action of electricity are

not yet sufficiently understood to afford a satisfactory explanation of the interesting fact, that in external local faradization the current of tension is the most effective, both as to objective and subjective symptoms, while in internal local faradization, the so-called current of quantity acts most vigorously. In gynecological cases it is a very simple thing to differentiate between the use of the currents of quantity and tension. The office of the induction current in these cases is to relieve pain, and, through its influence over uterine-contractions, and secondarily over the circulation, to relieve conditions of engorgement and congestion.

The first of these beneficent results is accomplished through the action of the induction currents of tension, and the second through the currents of quantity. The induced current of quantity is truly preventive in its action.

In those common cases of retrograde metamorphosis that follow confinements and abortions, this current through its action over the smooth muscular fibres of the uterus, hurries on the circulation, and if used in the earlier stages of sub-involution does much to prevent subsequent inflammatory conditions with their train of separate and distinct uterine and ovarian disease. Like ergot, the current of quantity controls post-partum hæmorrhage, but acts with far greater promptness and certainty. Its action upon the uterine, vaginal, and rectal walls is stimulating and tonic, effects which render its action useful in many abnormal conditions of those parts that will readily suggest themselves to the intelligent practitioner.

For the relief of pain, uterine and ovarian, both of the induced currents of tension can be relied upon for excellent service. It is not to be understood that there is anything magical in their effects (although in certain cases the effects seem little less than magical), nor that the method is uniformly successful in relieving pain. Its failures are sufficiently frequent, for it cannot be expected to be of permanent service, when pain is due to irremovable organic causes. Even in these cases, however, much temporary relief is often obtained, just as the distressing pains of scirrhus cancer of the breast are often wonderfully relieved for the time being by the introduction of a needle and the use of the constant current of electricity.

Bi-polar faradization is of considerable value in certain cases of amenorrhœa. In cases due to inertia and defective nutrition of the uterus, the current of quantity is manifestly most efficient. The currents of tension are indicated in an entirely different class of cases. In such cases the patients look well, and feel tolerably strong, but yet are nervous and suffer from mental depression. The internal applica-

tion of the current of tension will in many of these cases be followed very quickly by a return of the menses and a corresponding relief of unpleasant symptoms. Hysterical hyperæsthesia of the whole abdominal surface, and that form of local hyperæsthesia associated with vaginismus, has in numerous cases been found to be most favourably affected by the action of the induced currents of high tension.

So tolerant is the uterus to the influence of currents of high tension, that it is usually necessary to utilize the full strength that any apparatus will afford. Even then, after its action has been continued a few moments, the sensation may entirely die away and leave both patient and physician quite in doubt whether any current is really passing.

With the currents of quantity it is very different, and the minimum of strength may in the beginning be unpleasantly felt. The only way to prevent this is to place in the circuit a rheostat, by the aid of which the current can be gradually increased from zero to any desired strength.

ELECTRICITY IN GYNÆCOLOGY (Recent Papers on.) (See also preceding article.) *R. Milne Murray, M.B., F.R.C.P.*

Although the discussion on the gynecological application of electricity has not been so animated during the past year as during those immediately preceding, yet the number of papers published and cases recorded bearing on this subject show that the interest in it is not abated. The almost universal testimony of those who have practised it as to its efficacy in certain conditions, such as hæmorrhage, endometritis, etc., has convinced most of those who were originally sceptical that it is not entirely destitute of virtue of a kind at any rate, and they are bound to admit that many uterine myomata for example, are at least symptomatically relieved.

But while those who expected nothing have been bound to modify their opinions in some measure by the strength of evidence, it cannot be denied that many who expected much have been to some extent disappointed. The accounts first given of the results claimed by Apostoli and his immediate pupils were regarded as a justification of the hope that this agent was one capable of effecting a radical cure—a practical resolution in fact, of uterine myomata. It can scarcely be denied that the earlier statements of results seemed to justify this inference, though the later ones have been more cautiously worded.

The experience of the last few years has on the one hand furnished abundant evidence of the value of electricity in gynecological therapeutics, and on the other hand has shown clearly that we are not to expect from it too much. These two things are equally clear. It is an important therapeutic agent, and it is not a panacea.

A glance at some of the papers recently published may be of interest. Towards the end of last year Drs. Thomas and Skene Keith published a volume of two hundred and fifty-five pages giving a detailed account of one hundred and six cases of uterine myoma treated by electricity. No summary or analysis of the cases is given and it is difficult to draw an accurate conclusion as to the results. But a cursory analysis yields some remarkable results : Thus out of the one hundred and six cases only seven were not benefited, *i.e.*, 93·5 per cent. were relieved. In all the others the hæmorrhage was practically checked. In sixty-three of those cases the tumour present was "reduced." In four the tumour had *entirely disappeared.* In one of these last the tumour "filled the pelvis." In the other the reduction is described as "much reduced," "reduced one half or one third," "almost disappeared," etc. Of course with the diminution of hæmorrhage the comfort and well-being of the patients were greatly increased.

These results are sufficiently striking, and so far as the control of hæmorrhage is concerned they are borne out by the experience of almost everyone who has recorded his results. The effects on the bulk of the tumours are however quite exceptional. So far as I know no other practitioner has obtained results at all so favourable ; most in fact express themselves disappointed with the effect produced on the size of the tumour.

Further, it is a remarkable fact that of the one hundred and six cases only eleven were treated by puncture ; and in none save one in which puncture was employed is the diminution described as marked ; and in none of the four which disappeared was puncture employed.

The results recorded have been obtained chiefly by the intra-uterine application of the anode. This is a remarkable fact, because the cases recorded by others, in which marked diminution has occurred, have been mostly treated with the negative puncture.

Dr. P. F. Mundé, in June of this year, published his recent experience in the treatment of uterine fibroids. The interest of the paper consists in an account of eight cases of galvano-puncture in which the negative pole was used internally. In four of these cases the tumour had entirely disappeared. The results are so remarkable as to make them worth quoting : (1,) Tumour size of cocoa nut—one sitting 200 m.a. for ten minutes ; (2,) Tumour size of fist—four sittings 200 m.a. for ten minutes each ; (3,) Tumour size of adult head—four sittings of 200 m.a. for ten minutes each ; (4,) Tumour hard fibroid, filling whole of posterior portion of pelvic cavity—three sittings of 250 m.a. for ten minutes.

The small number of applications is specially worthy of note. Of

the eight cases recorded, the other four were not materially benefited in any way.

In a discussion in the New York Academy of Medicine the same author states he has never seen any reduction of the tumour follow the intra-uterine application of galvanism, a result in marked contrast with that of the Keiths. He admits the symptomatic improvement.

Dr. Engelmann, of St. Louis, contributes a paper to the American Gynecological Society on Electrotherapeutics in pelvic disease, and claims that we may resort to electrotherapy with good hope of success in the following conditions :—

I. *Chronic Inflammatory Conditions.*—(*a*,) In the uterine tissues : (1,) Stenosis, stricture, cicatricial contraction of uterine canal ; (2,) Several forms of endometritis, interstitial and fungous ; (3,) Enlarged indurated uterus of chronic metritis ; (*b*,) The results of inflammatory conditions in the circum-uterine tissues : (1,) Suppurative perimetritis. (2,) Solid exudates.

II. *Neoplasms—Fibroids of Uterus.*

III. *Extra-Uterine Pregnancy.*

Regarding the last he says, "Let it be understood that I do not deem it right to compare electricity with laparotomy in the treatment of extra-uterine fœtation ; the former is indicated in the early months when death of the embryo is likely to result in absorption, and should be resorted to as soon as the condition is suspected, while laparotomy is in place where absorption is no longer possible and when threatening symptoms demand immediate relief."

In the "Deut. Med. Woch." for July 3, F. Engelmann reports nine cases and draws the following conclusions : (1,) Diminution in bulk of tumour only demonstrable in isolated cases, and never considerable in amount ; (2,) Abnormal conditions of the mucous membrane greatly improved, and bleeding, and catarrh always checked ; (3,) Symptoms of compression relieved : (4.) Treatment as a whole does not accomplish more than other methods, but is a valuable adjunct.

At one of the sittings of the Berlin Congress, papers bearing on this subject were read by Apostoli (Paris), Danion (Paris), Gautier (Paris), Zweifel (Leipzig), Gubaroff (Moscow), McGinnis (New York), Brōse (Berlin), Cutter (New York). The results recorded in these papers go to confirm the opinion as to the marked influence of galvanism in diminishing hæmorrhage and catarrh, and relieving the symptoms of myomata and pelvic exudation. Moderate shrinkage of the tumour seems not uncommon in the experience of these authors, but total disappearance seems exceedingly rare. Thus Gautier who for a long time held the post of first assistant to Apostoli found that in ninety-

five cases of tumour treated, in only two did shrinkage to one-third of the original size occur.

The Transactions of the Edinburgh Obstetrical Society contain two papers on Electricity in pelvic disease. The first by Dr. Fraser Wright records twenty-three cases treated in the Buchanan ward of the Royal Infirmary. The cases are recorded in minute detail, and are very instructive. Perhaps the most remarkable is one in which an enormous pelvic exudation was entirely removed in a few weeks by intra-uterine and vaginal galvanism.

The second paper is by the writer of this notice, and deals with forty-five cases. Of eighteen cases of hæmorrhage seventeen were cured, and satisfactory results obtained in pelvic deposits and endometritis. In only one case was a noticeable reduction of a tumour affected, and this followed galvano-puncture.

REFERENCES.—"Electro-therapeutics in Gynæcology"; "Uterine tumours treated by Electricity," 1889; "Deut. Med. Woch.," July 3, 1890; "Amer. Jour. Obstet.," June, 1890; "Med. News," Jan. 25, 1890; "Brit. Gyn. Jour.," Aug., 1890; "Central. fur. Gyn.," p. 19, 1890; "Trans. Edin. Obstet. Soc.," vol. xv.

ELEPHANTIASIS.

Synopsis.—(Vol. 1889. p. 245.) During the fever **Saline Aperients** with **Opiates**, followed by **Quinine** and **Iron**. *Locally:* fomentations; **Electricity** is often useful in early stages.

EMPHYSEMA.

Synopsis.—(Vol. 1889, p. 245.) Use of pneumatic chamber or compressed air bath. **Kava-Kava**; ℞ Ext. Kavæ depur. grs. xlv, Sacch. Alb. grs. ccc, M. Ft. Pulv. divid. in tales x, Sig. Pulv. j 3tis hor.; acts well on the dyspnœa (p. 50).

EMPYEMA OF THE ANTRUM OF HIGHMORE.

Greville MacDonald, M.D.

The diagnosis of this condition is one of the most difficult points in the domain of rhinology. Generally speaking the presence of pus in the middle meatus, which pus on being wiped away is immediately replaced, affords strong probability of there being pus in either the frontal or maxillary sinus, or that the discharge is flowing from the anterior ethmoidal cells. Moreau Brown, of Chicago, recommends the injection of a solution of **Peroxide of Hydrogen** (1 part to 12 of water) into the antrum through the hiatus semi-lunaris. If pus is present it is driven out and fills the nose as a white foam. The treatment should invariably consist in the drainage of the cavity from the alveolar border, or by perforating the facial wall of the antrum above the alveolar border. A further means of objective diagnosis was recently added to our somewhat limited means by Voltolini. It consists in

transillumination of the antrum. The method is employed as follows: a five-volt electric lamp is attached to the extremity of a tongue-depressor, the lingual portion of which is constructed of vulcanite; this is inserted into the mouth and the tongue depressed, while the patient is directed to close his lips firmly. The room is then darkened by turning out the gas, and the circuit of the electric current is completed. Immediately a rosy-red light suffuses the face. According to Voltolini and Heryng, whenever there is pus or a solid tumour in the antrum, that side of the face, especially opposite the malar prominence, is less bright than the other; while on the contrary, in cystic disease, the side affected will be more brilliantly illuminated. In the diagnosis of solid growths there will be external swelling to distinguish the disease from empyema; for in every case of the latter where there is a discharge of pus from the nose, there can be no swelling resulting from retention. But in the diagnosis of the presence of pus by means of transillumination, the writer has encountered several difficulties. Thus any obstruction to the lumen of the nasal passages materially affects the transmission of light through the antrum; while, as pointed out by Christopher Heath, the thickness of the bones on the two sides may vary considerably. In one case of the writer's, so dark was one side that he was induced to open the antrum, although there was no strong corroborative evidence; but the antrum contained no trace of pus. So that this new means of diagnosis must be considered of service only as adding a little weight to the evidence when the latter is almost though not quite conclusive.

REFERENCES.—"New York Med. Jour.," July, 1890: "Berlin Klin. Woch.," Nos. 35 and 36, 1889; "New York Med. Jour.," June, 1890; MacDonald, "Diseases of the Nose," 1890.

Synopsis.—(Vol. 1890, p. 252.) Should it be necessary to wash out the pleural cavity, use lotions of **Boroglyceride, Boric Acid, or Tincture of Iodine**, 1 part in 1000, to be used at about 90° F.

ENDOMETRITIS. (See "Uterus," Diseases of.)

ENDOSCOPY. (See "Bladder" and "Urethra.")

ENURESIS. *Henry D. Chapin, M.D., New York.*

Dr. W. M. Powell reports the successful treatment of enuresis with the fluid extract of **Rhus Aromatica**. The remedy was given usually with compound tincture of cinchona or elixir of calisaya bark, Dr. Powell recommending the following formula for young children:—

R Ex. Rhus. Aromat. fl.	ʒiij	⎫ Aq. Cinnam.,	qs. ad ʒiij
Elix. Aromat.	ʒiss	⎭ M.	

Sig. Half teaspoonful, to be increased to one teaspoonful, four times a day after eating.

Much stress should be laid upon diet and general regimen. The quantity of drink should be restricted, and no fluid should be allowed after four or five o'clock in the afternoon for some time after the child is considered cured. The child should be taken up to urinate late at night, early in the morning, and, if necessary, once during the night, and should always be thoroughly awakened.

Very little meat should be allowed if the patient shows any rheumatic symptoms; indeed, children do better without it, owing to the effect it has of acidifying the urine, which irritates the bladder and provokes expulsion.

The child should be kept in the fresh air as much as possible, provided the weather be fine, and allowed to exercise, care being taken to have flannel next to the skin and the feet well protected with stout shoes. The child should be given a cool or even cold sponge-bath each morning, with a tablespoonful of sea-salt added. The body should then be briskly rubbed with a moderately coarse bath-towel, especially in the region of the spine.

REFERENCE.—"Annals of Gyn. and Paed.," May, 1890.

Synopsis.—(Vol. 1889, p. 52.) Tinct. of Lycopodium, gtt. xx to xxx.

EPILEPSY AND EPILEPTIFORM CONVULSIONS.

Graeme M. Hammond, M.D., New York.

Dr. E. C. Seguin in his interesting lectures on the "Treatment and Management of Neuroses," considers the subject of epilepsy from all positions. Idiopathic epilepsy, he states, presents itself with numerous pathological signs or stigmata. Thus we may notice the existence of hereditary taints. The child's parents have been debauched, addicted to sexual and alcoholic excesses, the victims of syphilis or of chronic starvation. The patient himself is frequently microcephalic, or has marked cranial asymmetry, his teeth are deficient or deformed, he may exhibit signs of rachitis, or his head may be abnormally large from hydrocephalus, or it is indented by pressure during delivery. There may have been asphyxia at birth either with or without convulsions. Other conditions which play a part in the causation of epilepsy are defective eyes (refractive and muscular deficiencies), undeveloped uterus, feeble or diseased heart, early and excessive self-abuse, the precocious use of alcohol and tobacco, severe acute diseases, and toxic, reflex, or febrile convulsive seizures in infancy.

While the routine, anti-epileptic treatment is being systematically carried out, these secondary conditions should be studied and corrected. An epileptic may present several such conditions simultaneously, viz., defective vision, dysmenorrhœa, and indigestion, each condition playing some part in the genesis of attacks. In regard to the cure of

epilepsy by cutting the ocular muscles and tendons, Dr. Seguin believes that we are now witnessing the decline of such an attempt, and holds that the question is apparently settled that treating the ocular defects of epileptics will not cure epilepsy, though it may reduce the sum total of exciting causes of attacks in some patients. The defective eyes of epileptics should be corrected, but there is the same demand on the part of the pathologically conditional stomach, ovary, foreskin, etc. The operation of ovariotomy for epilepsy and for hystero-epilepsy is a measure to be resorted to only upon the most exact and clear indications, never haphazard or as a fanciful last resort.

Dr. Seguin is a pessimist as to the curability of idiopathic epilepsy, and has not yet published any case as cured. He has records of patients who have had no seizures of any sort for periods varying from eleven to three years, and then the disease had returned. In the routine bromide treatment of epilepsy, Dr. Seguin lays down the following excellent laws: (*a*,) Subjects vary greatly in their capacity for resisting bromides. He had known bromism produced in an adult woman by 30 grains a day for a week or two, while a girl, aged fifteen, and a strong youth, aged twenty, took respectively, 150 and 200 grains *per diem* with no marked bromism; (*b*,) Children, little children particularly, bear much larger doses of bromides, proportionately, than adults. Many epileptic children, of from two to six years, will need between 40 and 60 grains *per diem* to arrest attacks; (*c*,) There is a certain proportion, in adults, between the size and weight of the patient and his capacity for resisting drugs; (*d*,) The resistance of organic cardiac disease, or of simply feeble heart, with a sluggish, relaxed state of circulation decreases the ability to withstand bromides, hence the necessity of occasionally combining digitalis with the bromides; (*e*,) Organic cerebral disease of any sort increases susceptibility to bromism; (*f*,) Acne should never serve as a guide to the dosage of bromides; acne can be greatly controlled by giving the drugs largely diluted in alkaline waters, and by administering full doses of arsenic from time to time; (*g*,) Impending bromism is indicated by the loss of the reflex action in the palate and throat (and we should aim to obtain this effect in all epileptics), somnolence during the day, weakness, staggering gait, a dull, expressionless face, partial dementia, partial aphasia, increasing knee jerk, feeble cardiac action and reduced arterial tension, a peculiar foul breath, coated tongue, and anorexia; (*h*,) It is best to use a single bromide and to administer it simply dissolved in water. The bromide of sodium seems to be less irritating to the gastro-intestinal tract than any of the others; (*i*,) The dose should be largely diluted; small doses up to

30 grains should be given in half of a large tumbler of water, and the larger doses, from 30 to 60 grains, in a large tumblerful of water, to be drank slowly in all cases. Ordinary drinking water will do, but a slightly alkaline water favours the rapid and easy absorption of the remedy; Vichy water or lithia water is best; (*j*,) Most or all of the bromide destined to influence the patient for twenty-four hours at a time should be given within four or six hours of the time when attacks are most likely to occur. In nocturnal epilepsy it is best to administer all the day's bromide at one dose of 40, 60, 80, or 100 grains, properly diluted at some time during the evening. In some cases where the seizure occurs just before rising the patient should be aroused at two or four a.m. to take a part or the whole of his dose. The first dose of the day should be taken on awaking. Other doses during the day should be taken after food. A dose of **Carlsbad Salts** or a few drops of **Nux Vomica** may, with great advantage, be given with the early morning dose; (*k*,) Without absolute exactness in regularity of taking bromides, success is impossible. As epileptics are very forgetful the doses should be given by another person. The continuous dosage of bromide is far preferable to the intermittent giving of larger doses. The problem is to give just as little bromide as shall secure the patient against attacks; a distinct therapeutic bromism is to be produced and kept up, and pathological bromism avoided. In cases where bromide acts unfavourably it is often expedient to combine it with chloral. With very severe acne, of confluent form, with resultant large, elevated, fœtid ulcers on various parts of the body, chloral should be substituted for a large part of the bromide. In cases of unusual debility and mental dulness from bromides, where, if the bromides are reduced the attacks recur, they are greatly improved by the substitution of a little chloral for some of the bromide. The two following formulas can be employed with benefit: (1,) A weaker solution, apothecaries' weight:—

℞	Chlorali	℥ij	Aquæ	℥vij
	Sodii Bromidi	℥x		

One teaspoonful of this solution contains about 3 grains of chloral and 12 of bromide.

(2,) A stronger solution, apothecaries' weight:—

℞	Chlorali	℥ss	Aquæ	℥vij
	Sodii Bromidi	℥j		

Each teaspoonful contains about 5 grains of chloral and 10 grains of bromide.

The treatment of *petit mal* is much less satisfactory. The best results are derived from combining with a very moderate bromide course, the free use of **Strychnine** and **Atropine**, or **Belladonna**, giving

usually the sulphate of strychnine, gr. ij, dissolved in dilute nitro-muriatic acid, ℥j. The dose varies from 6 to 16 drops after meals, well-diluted. Atropine is best given in granules of $\frac{1}{3\,0\,0}$ grain each. From 3 to 6 a day are given—enough to produce a decided effect on the pupil and the mouth. **Digitalis**, **Ergot**, and **Ergotine** seem to succeed in some cases. **Strychnine** is serviceable where there is weakness of accommodation and feebleness of the interni (exophoria). It has a specific effect upon the third cerebral nerve, strengthening it and its attached muscles. Where the externi are weak (esophoria), **Belladonna** or **Atropine** by producing a paretic condition of the third nerve and dependent muscles, relieves the strain and brings relief. **Digitalis, Strophanthus,** and pure **Caffeine** (not the citrate) are useful for patients whose hearts are diseased or weak and whose peripheral circulation is sluggish. **Arsenic** is a valuable remedy against the acne of bromism. Granules containing $\frac{1}{2\,0}$ of a grain of arsenious acid should be given after each meal for one week in each month. Washing the face with warm water, soap, and a little ammonia, should be practised daily. Ointments are of little use, the best being those containing sulphur. **Iron** and **Cod Liver Oil** are frequently called for in the course of a long-continued treatment. In idiopathic epilepsy in children whose teeth are bad, or notched, or typically Hutchinsonian, the **Bichloride of Mercury** in doses of $\frac{1}{1\,5\,0}$ to $\frac{1}{1\,0\,0}$ of a grain in an elixir of gentian or calisaya bark should be given for long periods of time.

Dr. M. Allen Starr in a recent paper on peripheral irritation and nervous phenomena with reference to eye strain, after referring to the neuroses which had from time to time been claimed to proceed from irritation of the genital organs, the nasal cavities, the aural cavities, and even the teeth, proceeded to discuss the latest form of peripheral irritation due to a want of balance between the various ocular muscles. Though each form of peripheral irritation might produce nervous symptoms, no one form had such a special importance as to warrant the extravagant statements made by its earliest supporters. While it was undoubtedly true that many nervous disorders were produced secondarily by local irritations, it was also true that nervous affections so produced bore very different characteristics from cases of true epilepsy and the well-known forms of mental disease. When peripheral irritation existed sufficient in degree to be injurious, nature pointed it out by producing a sense of discomfort in the part irritated. It was the author's experience that unless an extreme degree of ocular insufficiency existed, patients did not suffer discomfort, and it was really a matter of very little importance. Out of three thousand cases of nervous disease he could cite only one case of true nervous mani-

festation undoubtedly caused by eye-strain. The conclusion, therefore, was that while eye-strain or other peripheral irritation might be a source of nervous manifestation, it was a rare cause of nervous disease. He did not believe that true epilepsy or chorea could be produced by eye-strain or be cured by its relief, and thought that the general indiscriminate recommendation of treatment directed to the relief of supposed eye-strain in these diseases, would soon come to be recognized as malpractice.

In discussing Dr. Starr's paper, Dr. B. Sachs deprecated the extravagant way in which cases of reflex neurosis had been operated on. Headaches accompanying eye-strain, or reflex headaches from trigeminal neuralgia or dental difficulty, were no more of reflex character than a pain in the thigh due to neuritis of the sciatic nerve. It was the direct irritation of the terminal ends of the nerve, and there was nothing reflex about it. He thought that many cases of facial chorea and facial twitching, supposed to be due to nasal obstruction, and treated accordingly, would do much better under the ordinary treatment for chorea.

Dr. Herman Knapp said he had not seen that nervous symptoms had been at all improved by treatment directed to the eye. It was an exaggeration to say that the most minute degrees of insufficiency called for an operation.

Dr. Roosa stated that, in his opinion, there never had been anything in the doctrine which advocated the operation on slight degrees of insufficiency for the cure of epilepsy and chorea.

Dr. C. S. Bull thought the partial tenotomy of the ocular muscles for producing any lasting effect for the cure of nervous diseases was absurd. The prismatic test of the muscular strain was the proper evidence for determining whether partial or complete tenotomy was to be done.

Dr. W. R. Birdsall believed a class of cases existed in which peripheral irritation might cause nervous symptoms, the removal of which might bring relief. He thought that where evident loss of equilibrium between the ocular muscle existed it should be corrected.

Dr. Mary Putnam Jacobi said the fundamental function of the nervous system was directed toward the central co-ordination of the multitudinous impressions which were incessantly impinging upon the periphery of the organism, and to the direction of the resultant impulses into motor channels. Hence it was to be expected that disordered phenomena would arise, either when there were morbid impressions, or when the central co-ordination of normal impressions was defective or when the channels of central impulse were blocked or

impeded. There had been an immense exaggeration in referring symptoms of all kinds to entirely insignificant lesions of the utero-ovarian system, and even of assuming the necessary existence of these lesions where they could not be tangibly demonstrated.

On the other hand, Dr. D. B. St. John Roosa read an interesting paper on the subject in which he vigorously combats the views of Stevens that many functional nervous diseases, particularly chorea, epilepsy, and hysteria are due to a lack of equilibrium of the ocular muscles. Dr. Roosa presents a table showing the examination made of six thousand four hundred and fifty-five patients. Of these cases, three thousand five hundred and eighty-four showed errors of refraction. Out of this great number of patients there was not a single case of epilepsy or hysteria, and only three cases of chorea. These patients consulted Dr. Roosa, not because they had general nervous disease, but because they had symptoms beginning plainly in the eye, or in its appendages. In accordance with the theory that the cause of chorea and epilepsy, and so forth, are to be found in the ocular refraction of muscles, it is not necessary that the eye or its appendages should manifest any symptoms at all. Patients who never knew they had an ocular symptom, are told that all their troubles proceed from their accommodative and visual apparatus. This is not in accordance with the usual condition of things. A foreign body in any part of the body may give rise to reflex disturbances, but it will also give local symptoms. There is nothing to show that a refractive error or a want of muscular equilibrium that causes no local disturbance, will, except in highly exceptional cases, if ever, cause any constitutional disturbances. In examinations made on one hundred and three patients, none of whom were aware of any ocular trouble, only seventeen were found to have muscular equilibrium. In summing up his twenty-six years' work as an ophthalmologist, Dr. Roosa concludes as follows : (1,) The eyeball of the human race is seldom emmetropic ; (2,) Perfect equilibrium of the ocular muscle is by no means common ; (3,) Defects in these two states do not necessarily produce local disturbances ; (4,) Asthenopia depends chiefly upon nervous exhaustion and uncorrected errors of refraction ; (5,) The line should be sharply drawn between asthenopia due to exhaustion and that due to faulty refraction ; (6,) Astigmatism forms an important factor in the etiology of accommodative asthenopia, muscular asthenopia falls into the background, while the definition of asthenopia has been much amplified ; (7,) The origin of a considerable class of such disorders as chorea, epilepsy, and hystero-epilepsy, has not been found in errors of refraction nor in insufficiencies of the muscles of the eyeballs.

Dr. Fred. S. Crossfield relates a case of epilepsy caused by intranasal disease. The patient, a young man, had had epileptic seizures about twice a month for six years. During all this time he took bromides in some form, with cod-liver oil and hypophosphites. Dr. Crossfield, observing that the patient was a mouth-breather, examined the nares and discovered a marked hypertrophy of the inferior turbinated body with almost complete stenosis. There was a marked deviation of the septum on the left side, with some exostosis in the form of a sharp angle which pressed upon the inferior turbinated body, which was also hypertrophied. There was a mass of hypertrophied adenoid tissue of the naso-pharynx and some thickening and elongation of the uvula. All of these abnormalities were removed by proper operations. He only had one epileptic seizure after treatment was begun. It is now three years since the last treatment and he is perfectly well.

Dr. Wildermuth states that he has seen convulsions entirely disappear after using **Amylene Hydrate** for six or eight weeks. The dose which he gives is from 30 to 60 grains in a 10 per cent. watery solution. In some cases the amount given in a day may be increased up to 2 drachms. The taste may be disguised by diluted wine or syrup.

Bendandi reports a case of epilepsy cured by trepanning the cranium. The patient, when a child, had received a blow from a stone on the occiput. At the age of eighteen an epileptic attack followed a fright. When the author saw him he was having two attacks daily; there was right hemiparesis, contraction of the flexor muscles of the right arm, and drawing of the right facial angle. Trepanning over the motor centres on the left side of the skull was performed. The dura appeared healthy. A cruciform incision was made in it, from which a tablespoonful of colourless serous effusion escaped. An incision was made in the cerebral tissue to a depth of three centimètres. The finger was introduced into the wound but no signs of suppuration or extravasation were found. The epileptic attacks ceased, and up to the time the case was reported (two months after operation) had not returned. There was great gain in mobility, the patient being able to write well, which he could not do before.

Dr. Theodore Diller reports nine cases of epilepsy treated by **Antifebrin**. All of these cases had been unsuccessfully treated by bromides and other remedies. He found that in all the cases in which the drug was given continuously there was a reduction of from 25 to 75 per cent. in the number of attacks. There were no unpleasant symptoms following its use; no depression and no skin eruption. The

beneficial effects of antifebrin were most marked after the drug had been in constant use for three months.

Biborate of Soda has been given by Drs. J. S. R. Russell and James Taylor in twenty cases of epilepsy. The age of the patients varied from four to thirty-two years, and the dose of the drug employed ranged from 7 to 60 grains three times a day. The larger doses were reached by gradually increasing the quantity. All of these cases except one were improved, some of them to a considerable degree. They do not compare borax to bromide in the treatment of epilepsy, but they consider it well worthy of a trial, particularly where bromides fail or are badly borne.

Dr. Stewart reports seven cases of epilepsy which were treated by the administration of borax. In the first case (a girl, aged thirteen), the attacks dated from birth, and varied in frequency from two to twelve in twenty-four hours, the majority of them occurring at night. Under the influence of borax the attacks gradually diminished in frequency. In nine weeks they stopped entirely. At the time of the report the patient had been one month without an attack. The second case was one of nocturnal epilepsy of five years' duration, complicated by mitral stenosis. Without treatment the average monthly number of fits was one hundred and one. Borax was given. In the first month the attacks were reduced to twenty, in the second month to seven, in the third month to one, in the fourth month to five, none in the fifth month and one in the sixth. In two other cases of nocturnal epilepsy borax reduced the frequency of the attacks very materially. In the three remaining cases the seizures occurred both by day and by night. Borax seemed to control the nocturnal paroxysms but did not affect those which came on by day ; while the latter were relieved by bromides, which, however, were shown to be inert in arresting the night attacks. Dr. Stewart concludes that borax exerts a peculiar influence over nocturnal seizures, and that it was, in cases where the fits were entirely of this kind, that the greatest good might be expected. Bromides should be given for diurnal seizures, and bromide and borax combined in those cases where the fits occurred both by day and by night.

The writer desires to add his experience with borax in the treatment of epilepsy. In all, eight cases were treated with this drug. In three cases the attacks took place in the day-time only, in three cases there were seizures both by day and by night, and in the two remaining cases only at night. The drug was administered in doses of from 6 to 15 grains twice a day according to the age of the patient. In one of those cases, in which the attacks only occurred in the day-time, there

was no apparent amelioration. In the other seven cases the attacks were diminished, but in no instance was a case cured. Even though the drug was continued, the attacks, after being absent for two or three weeks in patients who had previously had one or more daily, gradually returned, and in a short time were as severe as they had been before the borax was used. Except in one instance I could see no difference between the action of borax on nocturnal epilepsy and its effect on the diurnal variety.

Dr. Carl Schroeder has administered **Perosmic Acid** in eight cases of epilepsy, in doses of $\frac{1}{6}$ of a grain daily in pill form. None of the cases were cured. Two were somewhat improved, while in the other six cases no action whatever was perceptible.

In thirteen cases of epileptiform and apoplectiform attacks of general paralysis and chronic cerebral affections, Dr. Christian has employed the following solution to be used subcutaneously: **Tanret's Ergonine, 0·01; Lactic Acid, 0·02; Cherry Laurel Water, 10** centigrammes. In seven cases the symptoms disappeared after one or more injections. Six patients ultimately died, three of them from other causes, after decided improvement. On the whole ten had their attacks stopped. No local bad effects were produced. Tried on true epilepsy the effect was *nil*.

Hystero-Epilepsy.—Dr. S. B. Lyon reports the case of a woman, thirty years of age, who had characteristic seizures of hystero-epilepsy and maniacal excitement. He gave her a hypodermic injection of $\frac{1}{8}$ grain of **Muriate of Pilocarpine** over the left ovary; the convulsive movements ceased, consciousness returned, and a quiet sleep followed.

REFERENCES.—"New York Med. Jour.," April 5 and 12, 1890; "Therap. Gaz.," Mar. 15, 1890; "Med. Rec.," April 19, 1890; "Jour. Amer. Med. Assoc.," Mar. 8, 1890; "Therap. Gaz.," p. 160, Nov. 1889; Ibid., Sep. 15, 1889; "Lancet," Nov. 16, 1889; Ibid., May 17, 1890; "London Med. Rec.," Feb. 20, 1890; "Therap. Gaz.," Aug. 15, 1889; Ibid., June 15, 1890.

Synopsis.—(Vol. 1889, p. 246.) **Ol. Morrh.** and **Phosphorus**, excluding butcher's meat for two years. Help action of bromides by red pepper pack, before going to bed (add a teaspoonful red pepper to pint of water, soak flannel in this and wrap it round body before going to bed); For muscular twitchings during sleep, $\frac{1}{24}$ gr. **Corrosive Sublimate**; when gastro-intestinal symptoms accompany, give **Belladonna** and **Zinc Oxide**, or if breath be foul, give **Turpentine Resin** with **Belladonna**. **Digitalis** is indicated in cases with genito-urinary or digestive symptoms; **Chloral Hydrate** is useful; galvanism and faradism help in a few cases; **Tincture of Simulo**, ʒss to ʒij several times daily; **Antipyrin** useful in some cases but of transitory effect; **Osmic Acid**, gr. $\frac{1}{100}$; **Nitro-Glycerine**, gr. $\frac{1}{1000}$ to $\frac{1}{100}$ t.i.d., gradually increased,

better in *petit mal* than *haut mal* cases. **Actual Cautery** applied over shaven scalp in some cases of chronic hemiplegia and epilepsy; a leaden bonnet has also been used; Galvanisation of the thyroid palliated in some cases; it must be continued for several weeks; **Antifebrin** is almost useless. **Amylene Hydrate**, average dose iijss grammes as hypnotic in epilepsy, especially when rest is disturbed by cramp (p. 12).

(Vol. 1890, p. 254.) **Bromides** are most useful; **Amyl-hydrate**, 5 to 8 grammes daily, dissolved in water; **Antifebrin**; anodal galvanization of the brain, together with small doses of bromide; **Borax**; **Solanum Carolinense** tincture in drachm doses.

EPIPHORA. (See "Eyelids.")

EPISCLERITIS. *W. Lang, F.R.C.S.*

Where leeching the temple as close to the outer canthus as possible, atropine drops, dry heat, in the form of hot dry cotton wool compresses, and the internal administration of iodide of potassium or salicylate of sodium, together with antipyrin (grains 15 every four hours) do not produce any effect, then **Colchicine** can be tried, and Aberdie has found the greatest benefit from its administration in granules of $\frac{1}{64}$ of a grain, 2 to 4 of which are given in the twenty-four hours.

In this at times intractable malady Prof. Snellen had derived personal benefit, after all internal remedies had failed, from the sub-conjunctival injection once or twice a week of a few drops of a 1 in 5000 solution of **Corrosive Sublimate.** He had also obtained equally good results in some other patients.

Synopsis.—(Vol. 1890, p. 256.) **Lanolin-Mercurial** frictions. Internally, **Mercury, Colchicine,** and **Salicylate of Soda.**

EPISTAXIS. *Greville MacDonald, M.D.*

Simple epistaxis is almost invariably due to some minute erosion or rupture of a small vein on the anterior portion of the septum. A good light and a nasal speculum will usually reveal the bleeding point, which, if the hæmorrhage is not severe, may be touched with the **Electric** or other **Cautery**; or if the outpour is very rapid a small plug may easily be inserted between the septum and the outer wall. Posterior plugging ought never to be necessary except in rare cases of post-nasal hæmorrhage. Potter, of Buffalo, has asserted that nasal bleeding is frequently associated with septal deformity; but before according a clinical value to this undoubted fact, it must be remembered that in most nasal diseases, as well indeed as in most cases of perfect nasal health, there may be discovered more or less deformity of the septum. But in so far as the hæmorrhage depends upon an erosion caused by the removal of desiccated mucus from a concavity on the septum; which desiccation usually depends upon the fact that the other side is obstructed, while that affected has to perform all the moistening functions of the

two sides ; just so far and no further may we assert that epistaxis depends upon deformity of the septum.

REFERENCE.—"Jour. of Laryng.," Aug., 1890.

Synopsis.—(Vol. 1889, p. 42.) **Geranium Maculatum**, grs. x to xl, and also used locally.

(Vol. 1890. p. 257.) Apply styptics to bleeding points by means of speculum ; supine posture ; tampons saturated with **Oil of Turpentine** (irritating to mucous membrane) ; injections of **Citron-juice.**

ERYSIPELAS. *W. Allan Jamieson, M.D.*

As usual, a number of suggestions are forthcoming as to the best treatment of idiopathic erysipelas of the head and face. Thus Dr. Samter recommends the subcutaneous injection of **Carbolic Acid,** the pure acid in the proportion of 39 parts each of acid and **Absolute Alcohol** dissolved in 94 of **Distilled Water.** Koch selects **Creolin.** His formula is 1 part of **Creolin,** 4 of **Iodoform,** and 10 of **Lanoline** spread well over the affected area, and covered with gutta percha tissue. Dr. Hamburger, again, paints a border of tincture of **Iodine** round the erysipelatous spots, and repeats the application twice a day as long as there is any disposition for the disease to extend. **Aconitine** internally in doses of the 1-250th of a grain every six hours finds favour with M. Tison, and locally a solution of **Camphor** in **Ether,** which he finds cool and pleasant. In estimating the relative value of all remedies in erysipelas one must bear in mind that the complaint has a pretty definite course of a week, and unless relapses occur, or complications arise, it spontaneously comes to an end about that time. It is seldom a fatal, far less a dangerous disease. The mode of treatment which we have found by far the most agreeable to the patient, and the most satisfactory in practice, is to cover the affected parts with the following ointment, the basis of which is one suggested by Sir Dyce Duckworth :—

℞ Cretæ Præpar. Adipis ana ʒss | Ammoniæ Sulphoichthyolici ʒij
M.

This is gently smeared on twice a day, or more frequently, and the parts kept enveloped in a thick layer of cotton wool. The unanimous declaration of the patients is that this ointment at once imparts a grateful coolness, and tends to lessen the hyperæmia, and to diminish the risk of abscess. We have fully satisfied ourselves that the tincture of the perchloride of iron possesses no specific action on the course of facial erysipelas whatever. When a sufficient number of cases are treated with large, with small, and with no doses of iron at all, and are compared, the results as to duration are the same. The sole advantage of the administration of iron seems to be that broken down persons are sometimes placed in better circumstances in

convalescence when it has been given during the progress of the complaint.

Synopsis.- (Vol. 1890, p. 257.) ℞ Prepared Chalk and Lard equal parts, and in cold weather Olive or Almond Oil to soften it ; to this Ichthyol 25% is added, the parts are smeared freely with this and enveloped in salicylic wool. Equal parts of **Lanolin** and **Ichthyol** may also be used.

ERYTHEMA NODOSUM.

Synopsis.—(Vol. 1889, p. 249.) One of the best remedies is **Rhus Tox.** ♏ ii. to v. thrice daily (Percy Wilde). Rest in bed, painting tubercles with flexible **Collodion** and giving **Salicin** internally. *Erythema Multiforme.*—Wash with gruel and apply ℞ Potass. Sulphurat., Zinci Sulph., Glycerini āā ʒj, Aq. ʒiv, M. Ft. Lot., use this twice daily ; and give ℞ Potass. Acet., ʒiv., Tinct. Nuc. Vom., ʒij, Ext. Rumicis Fl., ʒiv, M. A teaspoonful in water thrice daily, after meals. *Erythema Pernio*—(see "Chilblains".) *Erythema Intertrigo*—As dusting powder, **Zinc. Ox.** j part to **Starch**, iij parts, or **Zinc Ol.** j part to **Kaolin**, (thoroughly pulverised) iij parts ; In infants **Ac. Borac**, grs. xx to **Lard** or **Vaseline**, ʒj (Crocker) ; or, ℞ Bismuth. Subnit., ʒiij, Plumbi Carb., ʒij, Ung. Zinc. Ox, Benz., ʒiss, M. Ft. Ung. (Shoemaker).

ERYTHRASMA.

Synopsis.—(Vol. 1889, p. 14.) **Anthrarobin** ; ℞ Anthrarobin, x, Borax, viij, Distilled Water lxxx, M. ; or, ℞ **Anthrarobin**, xx, Borax, xxxv, Alcohol and Glycerine, each xc, M. ; The alcoholic tincture is preferable to ointment, and washing first with **Potash Soap** increases its action.

ERYTHRO-MELALGIA.

Synopsis.—(Vol. 1890, p. 258.) Local subcutaneous injection of **Morphia** and **Atropia.**

EVISCERATION.

Synopsis.—(Vol. 1890, p. 258.) To relieve the severe pain following evisceration, it is recommended to wipe the inner surface of the sclerotic with cotton wool dipped in pure **Carbolic Acid.**

EXOPHTHALMIC GOITRE. (See "Goître, Exophthalmic.")

Synopsis.—(Vol. 1890, p. 259.) **Arsenious Acid** in minute doses night and morning, together with half-drachm to drachm doses of **Potassium Bromide** between meals ; **Quinine** ; iodides of potassium and sodium are contra-indicated ; **Digitalis** is sometimes useful ; **Electricity** either by faradisation of the sympathetic or galvanism of præcordial region ; **Hydrotherapy**, *e.g.*, sea-bathing, packs, and needle baths are useful, but inadmissible when there is heart or lung lesion ; **Strophanthus** tincture in 2-drop doses every six hours, increasing the dose to 10 drops ; **Cannabin** (Gastinet's) 4½ grains mixed with sugar of milk, and made into five pills to be taken in the twenty-four hours ; electric baths and the Weir Mitchell diet have been used.

EYE (Diseases of). (See special articles.)

Synopsis.—(Vol. 1889, p. 249.) **Antipyrin** injections into temple for relief of ocular pain, also in keratitis, iritis, and glaucomatous irido-choroiditis ; the formula used is **Antipyrin**, xxv centigrammes ; **Cocaine**, ss centigramme ; **Distilled Water**, x drops ; **Corrosive Sublimate**, 1 to 2500, as lotion in purulent and diphtheritic ophthalmia, in trachoma, sycosis tarsi, and when ulcers exist. **Pilocarpine** injections in tobacco amblyopia. **Cineraria Maritima Juice**,

ij drops instilled thrice daily for cataract (p. 32); **Ephedrine**, 10% solution, useful as **Mydriatic** (p. 38).

(Vol. 1890, p. 262.) **Perchloride of Mercury**, 1 in 1000 or 2000 is best antiseptic in ophthalmic surgery. In rheumatic or gouty affections, especially chronic, **Colchicine**, gr. $\frac{1}{30}$ to $\frac{1}{10}$, spread over twenty-four hours. In acute rheumatic or gouty conditions, **Salicylate of Soda**; and in milder cases, **Salicylate of Lithia**, or a combination of colchicine with both salicylates may be used in all cases. **Tincture of Colchicum** in gouty scleratitis and episcleritis. Injections of **Pilocarpine** in albuminuric retinitis in detached retina in young people due to plastic choroiditis; when pilocarpine fails, try **Strychnine** injections combined with **Iodide of Potassium** internally.

EYE (Errors of Refraction of). *W. Lang, F.R.C.S.*

It being quite impossible to condense into the space allotted to this article all the laws that pertain to the abnormal refraction of the eye, the reader is referred to the special articles in text books on "Diseases of the Eye," or to works on "Refraction," where he can acquire the theory of the subject. When this has been thoroughly mastered, he will find that its practical application is beset with many difficulties, some of which, it is hoped, these notes will help to smooth away.

Trial Frame, Test Lenses, Test Types, etc.—The above-mentioned appliances must be obtained before commencing work, but as the majority of such things which are sold, do not adequately fulfil their object the following points may be of service in guiding the purchaser to obtain what he will require. *The trial frame:* It is only necessary to have one, which being adjustable, should fit any face and have two grooves for carrying two sets of lenses, a spherical and a cylinder. Such an one is the Moorfield's frame originated by Messrs. Beck, and since slightly modified, at my suggestion, by Messrs. Curry and Paxton: the movements being now accomplished with greater ease and steadiness by means of screw actions; a millimètre scale with an indicator showing the amount of separation between the centres of the rings allows the frame to be used as a *base line* measure, and as the limits of the scale are from 50mm. to 70mm., it fits the widest or narrowest face. The nose piece can be raised or lowered by another screw, and its height is also indicated by a scale; the portion that rests on the bridge being broad and hinged and shaped like a saddle, fits any nose and does not cause the patient pain by cutting into the skin. The wings or side pieces are long, flexible, and well tempered, so that whilst holding the frame in position by their elastic grip of the head, they never alter their shape, however much they may be manipulated. The eye-pieces are perfect semi-circles, and large enough to take the thickest lenses in the trial case without the slightest difficulty. The back groove is used for the spherical lens, whilst the front groove holds the cylinder; there is no need of any clip apparatus

to keep the lenses in the grooves; such clips only impede the rapid exchange of lenses and thus interfere with the patient's observations. The numbering of the degrees which indicate the position of the axis of the cylinder is at present a matter of individual taste, but it is to be hoped that this will soon be regulated by some universally accepted law. The lines indicating every five degrees must be thin and distinct and come well up to the inner edge of the ring, whilst the numbers marking each ten degrees are clearly and boldly marked.

The *trial case lenses* may either be mounted in metal rings with handles or not, a point generally determined by the extra cost, but the surgeon in either case had better test the lenses himself, or at least a few of them selected indiscriminately. It is done thus: Two lenses of the same strength, but of dissimilar refraction, are held in contact one with the other, some fifteen inches from the observer's eye, in front of any distant object which must be looked at through the lenses. If the object appears to be stationary when the glasses are moved from side to side, the two lenses neutralize one another and may be considered to behave like a piece of plain glass. This should be repeated with the other lenses of the same numbering, and again by interchanging the lenses of the first and second groups, and if the observed object always remains stationary the lenses are correctly marked. Should the object appear to move, then the lenses are of different refractive powers and the apparent direction of the movement of the object indicates which is the higher refracting lens. If the object appears to move with the lens it is the concave, if against it is the convex. By testing each lens with the others of the same numbering the incorrectly marked one can be detected and returned to the manufacturer. The cylindrical lenses must be similarly tested. The line indicating the axis should be plainly and correctly marked, and long enough to be quite visible against the markings of the degrees when placed in the front groove of the trial frame. Usually they are not long enough to fulfil this essential requirement: consequently the position of the axis cannot be ascertained without removing the lens from the frame and thus interfering with the accuracy of the observation. To detect whether the axis is correctly marked, the lens should be held some fifteen inches from the observer's eye with the supposed axis parallel with the cross-bar of a window-frame; if correct, the bar will appear to pass in an unbroken manner across the lens. By rotating the lens slightly from side to side this break becomes very apparent.

Centering Lenses.—In a well-made lens the principal axis should be in the centre. To test this Messrs. Pickard and Curry some years since made me a simple apparatus consisting of a small brass plate

upon which slides a narrower second plate ; engraved on each plate is a vertical line as well as a transverse line across the middle. A millimètre scale on the larger plate indicates the distance which separates the two vertical and parallel lines, which together form the following figure + +. It is rare for a lens in a trial case to have an excentric centre, but the glasses in spectacles are not infrequently defective in this respect. To detect this error the spectacles should be held two or three inches above the apparatus and the two vertical lines approached or separated until they appear to pass through each spectacle lens in an unbroken manner. If at the same time the horizontal line is unbroken and passes through the centre, then the glasses are well made, and the distance between the two vertical lines is the same as the distance between the outer margin of one spectacle ring and the inner margin of the other spectacle ring. This is an important matter, for if the patient does not look through the optical centres, the glasses will have the effect of prisms and cause much discomfort. Since the distance which separates the visual lines varies from 52mm. to 70mm. it is necessary to measure this whenever strongly refracting lenses are to be ordered ; it may be roughly accomplished objectively, but only with accuracy in a subjective manner. If good binocular vision exists the trial frame and two stenopaic slits suffice, but if binocular vision is defective or does not exist, then a special apparatus known as a "base line measurer," made for me by Messrs. Curry and Paxton, is necessary to determine the distance. The stenopaic slits are about 8mm. long and ½m. or less broad, but whilst occupying the vertical meridian do not cross the horizontal meridian. They are placed one in each ring of the trial frame, which has been separated as widely as possible, and are so arranged that one slit is above and the other below the horizontal centre. The patient is now to direct his gaze and attention on a distant object, at least six mètres or more away, whilst the surgeon approximates the slits by turning the screw in the trial frame until the one slit appears to be vertically above the other so that only one slit is seen. The distance between the visual lines can now be read off on the millimètre scale of the frame ; this is the length of the base line. Where the glasses are to be worn constantly the full distance is ordered ; if only for reading, then 3mm. is deducted. For example, 63mm. the full distance, is ordered for a patient who wears his glasses constantly, whilst 60mm. would be ordered when single glasses are only for near work.

Test Types.—Snellen's distant types are the ones chiefly used. The illumination of the distant types should never vary, otherwise they are not a correct guide to the alteration that may from time to time

be found in a patient's sight. For this reason it is better to use an artificial light which will be constant in all states of the atmosphere—fog or sunshine. Two or more sets of types will always be necessary. For patients with retentive memories they can be set in a frame and altered at pleasure by means of a simple pulley contrivance which has been constructed for me by Mr. Paxton. A tape measure marked in dioptres and centimètres and a hair optometer will be found very useful for many purposes, to be described hereafter.

The Examination.—The patient presents himself complaining of some difficulty in seeing, and his vision has to be tested. The first thing that will be necessary is to ask the patient if he is aware of one eye being better than the other. The trial frame being adjusted, the better eye is excluded by an obturator (the eye must never be closed by the patient, or covered by the hand), the maximum amount of vision noted, and if it is not up to the normal, a weak convex glass, + 1 D, is put in the frame, and should the effect be to improve or at least not to dim the sight, the case is one of hypermetropia and the lens may be changed for stronger ones until the maximum acuity of vision with the highest convex glass is obtained. If the increase in the lenses be by 0·5 D or 1 D at a time very often a higher lens will be found than where lenses of wider intervals are placed in succession before the eye. A similar procedure has to be gone through for the second eye, and when completed both eyes are allowed to look at the test type at the same time, each through its own correcting lens. It will often be found that the patient sees as well or better if an additional convex glass is now placed in front of each eye, thus increasing the previously found glasses by a fraction of or by one or more dioptres. The lenses thus found represent the whole of the manifest hypermetropia, and if there is no indication, such as persistent headache, relapsing or chronic inflammation of the cornea, conjunctiva, lids, or squint, etc., for which the correction of the total hypermetropia is called for, then these glasses may be ordered and worn for several years, without alteration (for all near work), with absolute comfort and complete relief of the previously complained of asthenopia. When symptoms of asthenopia recur at the end of four or five years, a fresh examination must be made and stronger glasses ordered. When, however, the patient is under thirty or thirty-five years of age, and perfect visual activity is not obtained, or where it is thought advisable to order the full correction, it will be necessary to paralyze the accommodation and work out the refraction in an objective manner, by retinoscopy or by the direct method of estimation. To accomplish this a small drop of a 2 per cent. solution of

Homatropine and **Cocaine** in **Castor Oil** is placed on the inner surface of the lower lids and the patient directed to keep the lids closed for twenty minutes. At the end of this time the pupils will be sufficiently dilated for the examination, and at the end of forty minutes the accommodation will be completely paralyzed so that the amount of the total hypermetropia can be ascertained, or if retinoscopy be practised whilst the patient directs his gaze into the sight hole of the examiner's mirror, the astigmatism can be estimated to a quarter of a dioptre. When the examination is completed a drop of 1 per cent. solution of **Eserine** in **Castor Oil** must be applied to each eye, and the effects of the mydriatic will be neutralized and completely pass off within six or eight hours or even less. In making these solutions the pure alkaloids must be used, as their salts do not dissolve in oil.

Too much stress cannot be laid on the importance of using this solution of **Homatropine** in estimating the errors of refraction, since it acts quickly and thoroughly, and its effect is readily neutralized, all very important points either in hospital or in private practice ; whilst the action of atropine, which is so universally used for this purpose, continues for ten days. When once the refraction is ascertained in an objective manner, the surgeon's difficulties are at an end, that is, if he has confidence in his own observations ; it is then only necessary to leave the glasses thus found in front of the patient's eye and note the amount of vision obtained, and should it not come up to the normal standard the deficiency may be safely put down to an amblyopic condition of the eye. To confirm the results obtained by retinoscopy in a case of astigmatism the following is a very delicate plan : Leaving the supposed correcting glasses, both cylinder and spherical, *in situ*, the shadow will be noticed to move in the same direction in both meridians at the same time ; if the spherical lens be first increased and next diminished by a half or even a quarter of a dioptre and the shadows continue to move in a similar direction in both meridians, though with the one lens in the same and with the second lens in the opposite direction, then the cylinder is correct, and only the exact position of the axis and the alteration, if necessary, of the spherical lens need occupy the surgeon's attention. Whilst conducting this examination the patient must fix his gaze on the sight hole of the examiner's mirror. When the patient is going to wear his spectacles for near work or only occasionally it is well to examine him again at the end of the second day, when an allowance can be made for any return in the spasm of the ciliary muscles affecting either the spherical or cylindrical lens.

When the patient is over thirty-five years of age it will usually

be possible to test his refraction in a subjective manner, but this at the best is never so satisfactory as an objective examination, that is, if the vision cannot be brought up to the normal standard, as the deficiency may be due not to the eye but to incorrect glasses. To carry out this examination very little practice is necessary if the examiner will only insist on getting definite answers from his patient; not being content with the statement that it is clearer or dimmer, or not so good, etc., etc., but making the patient say what the letters are that he sees, and by these answers the surgeon is able to judge of the improvement or otherwise made by each lens. When the highest spherical has been determined, a weak convex cylinder, or if this does not improve the sight, a weak concave cylinder is placed before the spherical and rotated around in the front groove of the trial frame until the best position for the axis is found. To determine this the patient's attention is fixed on a letter which he has incorrectly named, and when he sees it correctly the position of the axis is noted. If, when the highest cylinder has been found which gives the best vision, no further alteration of the spherical adds to the clearness of the vision, then the result is probably correct. Although the patient may not be able to make out more than $\frac{6}{15}$ or $\frac{6}{9}$, yet he should be able to read all the letters in the line, and if he cannot, with but few exceptions, the lenses chosen are not the correct ones. It will be found that most people with but a moderate degree of hypermetropia state that they can see better without, than with, their correcting glasses when looking into the distance, although the glasses may improve their visual activity as tested by the test types; such patients, if there is no special indication for their being ordered to do so, need only wear their glasses for near work. At the other end of the scale of hypermetropes (those requiring about 10 D to correct their error of refraction), it will be found that very often the patient can be made to see but very little more with the glasses than without, either for reading or distance. Such cases, however, are not common. Between these extremes patients will be found to accept their glasses and wear them constantly with increased visual acuity and comfort.

If the patient is presbyopic the selection of the appropriate glass offers but little difficulty provided the surgeon thoroughly corrects the distant vision before attempting to find the glass for near work. A very useful test to ascertain if the selected glass is the correct one, is to ask the patient if it enlarges objects, such as his fingers held at the same distance from his eyes as his work or reading; should the finger or reading types appear magnified, then the glass is too strong. As a rule the highest lens which does not magnify is the correct one.

Myopia.—The importance of not ordering too strong a glass in myopia is so great that it is almost necessary to paralyze the accommodation in every case if one would avoid mistakes. This may be done with even less discomfort to the patient than in hypermetropia, as the myope of moderate or high degree is independent of his accommodation; consequently it is safer to put in homatropine whenever in doubt, and when the patient is young, even to order the use of **Atropine** for a few days rather than treat a case of spasm of ciliary muscles as myopia. The examination of a patient who complains of being short-sighted is conducted as follows: Each eye is examined separately whilst its fellow is excluded by an obturator placed in the trial frame. The distant vision is noted, and if it is less than $\frac{6}{60}$, the *punctum remotum* must be ascertained either by finding the farthest point at which the smallest near type can be read, or the most remote point at which the hair optometer held against a white background, is clearly seen. The distance is taken between the object and the outer canthus, and if a tape measure, to be had of Curry and Paxton, which is marked in dioptres as well as in centimètres, be used, no calculation is necessary to ascertain the strength of the lens required to neutralize the myopia. The lens thus found is placed in the trial frame, and if normal vision is obtained it is probably correct, but it is necessary to see if it be the weakest glass that will give this result. The other eye having been examined in a similar manner, both eyes are now uncovered, and if no farther diminution in the strength of the lenses can be borne then the result is probably correct. But when the patient is under twenty years of age nothing but an objective examination with paralyzed accommodation can be relied on. As an example I may quote my own case. Until twenty-five years of age, 4 D gave me $\frac{2}{6}$ of vision, and no other lens or lenses were better, and a subjective and objective examination by a most careful and accurate ophthalmic surgeon did not discover any astigmatism. Some ten years later I found that sph.—3·5 D ⊃ cyl.—1 D gives $\frac{6}{6}$, whilst with sph.—4 D the vision was only $\frac{6}{6}$. If a mydriatic had been used at any period before the age of twenty-five, this astigmatism, which has now become manifest by the lapse of time, would have been revealed. This is a typical example of so-called latent astigmatism, and well illustrates the fact that subjective examinations can never be relied on. As I have never had my accommodation paralyzed it may be that the above-mentioned glasses do not correctly represent my error of refraction; still no harm has resulted from the slight over-correction of one meridian. Where, however, a greater error is made it may lead to an increase of the myopia.

When the vision cannot be brought up to the normal a mydriatic is called for, and then an objective examination can be made. In ordering glasses for a myope it is well to have some rules to guide one, and the following will be found to answer every requirement: When the vision can be brought up to the normal, and the fundus is healthy, the glasses which fully correct the error may be ordered either for near or distant work or for constant use. It is rarely found that the vision reaches the normal standard when the myopia is as high as 10 D, usually it is not more than 6 D, so that these cases can be classed in the first or healthy group. The second group usually comprises myopes of between 6 D and 12 D, and in these the vision is below the normal, $\frac{6}{9}$ or $\frac{6}{12}$, and the retina and choroid show signs of being stretched, though the atrophic changes are not marked. Here the full correction may be ordered for the distance while for near work 3 D less should be prescribed. The third group comprises all myopes in which the vision does not reach $\frac{6}{18}$. The error of refraction may require a correcting glass of 12 D or higher, even 35 D, the highest I have seen. The fundus always contains evidence of present or past disease, fluid vitreous, choroiditis, or disease of optic nerve, or retina connected with the myopia. Here the full correction is never ordered for near work, always 3 D or 4 D less, and these glasses are to be worn constantly. At first it is advisable to keep the patient under the influence of **Atropine** until he shall have learnt to hold things at his new and more distant far point, otherwise he will endeavour to continue in his old habits and thereby cause his eyes much discomfort and no little harm. The complaint so often uttered by myopes on first taking to glasses, that they make things look so small, must be endured as it cannot be altered and will soon cease to annoy.

Anisometropia.—Where the difference of refraction between the two eyes is very great, 6 D or more, it will usually be found that the patient either uses only one eye both for near or distant objects, or, uses the one eye for near and the other for distance—thus in either case having monocular vision. It will be advisable to correct the error in every case, as patients have come under my observation who have had very marked anisometropia, as much as + 2 D in one eye and —4·5 D in the other, and have still retained binocular vision under all conditions whilst wearing the correcting glasses. If the full correction or any other combination cannot be worn, on account of the diplopia, it is an easy matter to let the patient return to his old habits.

Astigmatism. —The accurate correction of all cases of astigmatism

does more for the relief of headaches and retinal and muscular asthenopia than prisms or general treatment. Many patients who are now wearing spherical lenses and prisms with but partial relief to their symptoms, would under a mydriatic be found to have an uncorrected astigmatism—the cause of all their trouble. Already it has been pointed out that the presence of an astigmatism is compatible with more than normal vision. As an example: $\frac{6}{6}$ with Hm 4 D which was raised to $\frac{6}{4}$ on correcting 1 D of astigmatism. And it is this power of seeing more than normal, which many eyes possess, that is often the cause of astigmatism not being detected, the patient reading $\frac{6}{6}$ fluently, it is taken for granted that no astigmatism exists; whereas with full correction the same eye may see $\frac{6}{4}$, as in the case quoted. This is no rare occurrence, and if every eye were objectively measured when headaches or asthenopia was complained of, instead of attributing it to a want of muscular balance, much good would be effected.

EYE-LIDS AND APPENDAGES (Diseases of). (See also "Symblepharon.") *W. Lang, F.R.C.S.*

The number of operations for the relief of entropion of the upper lid testifies to the difficulty of overcoming this defect. Mr. Evans, of Sydney, Australia, where granular ophthalmia is so very common, has been for the last ten years completely satisfied with the following method which he devised for himself: A Snellen's clamp is applied to the lid, care being taken, before the screw is tightened, to stretch the skin upwards, and so tilt the margin of the lid forwards. With a Beer's knife the tarsal cartilage is split along the whole length of its free edge, up to a distance of two millimètres from the punctum, and to a depth of about four millimètres. An incision is made through the skin and connective tissue of the lid, parallel with the row of cilia, from three to four millimètres above it. The surface of cartilage exposed is cleared from connective tissue and an incision is made into it, through about a third of its thickness, parallel with the lower edge of the skin wound and from two to three millimètres above it. The point of the knife is inserted through the first wound in the edge of the cartilage, and brought out at the middle of the second incision in it, above the cilia. Carrying the knife in the same plane, the incisions are connected in their whole length. Thus the row of cilia and a piece of the tarsal cartilage are separated from the lid except at each end. A section of the separated tissue would appear wedge-shaped, the edge of the wedge upwards. The wedge of tissue is then rotated so that the edge of it points downwards and inwards, and is in contact with the eyeball, while the row of cilia points outwards and upwards. The skin wound is united with three or four fine sutures, the clamp removed, and an

ordinary dressing applied. The sutures should be removed about the third day. The measurements mentioned are only approximate, and must vary with the thickness and size of the lid to be operated on.

In entropion from sycosis, where the margin of the lid is thinner than normal, the above operation would not be satisfactory, but a method recommended by Dr. Meyer, of Paris, acts very well in most of these cases, and especially where only a few lashes are misplaced. It consists in forming a cicatrix along the border of the lid by burning through the skin and surface of the tarsus in a line parallel and close to the edge of the lid. A fine paquelin cautery, or better, a galvano-cautery, enables one to make a narrow burn which, on healing, everts the lid perfectly and without the risk of leaving a few fine lashes in the posterior lip of the split tarsus.

Lachrymal Sac (Catarrh of the).—The treatment of these cases had always been unsatisfactory until the writer adopted Dr. Meyer's plan of washing out the tear passage. Since then, instead of dreading the appearance of such a case he is pleased when it presents itself, knowing that much can be done for it and that without pain.

In the early stage of these cases the chief symptom is epiphora, which may last for months ; then gradually the sac becomes distended and in the course of one or more years the mucocele is established. At first clear mucous fills the sac, then muco-pus which may set up an abscess or be the cause of an hypopion ulcer.

At whatever stage the patient presents himself, the first thing is to ascertain the condition of the passage, whether there is a stricture or not ; this may take two or three examinations to discover. The method is, however, the same in all cases. The nozzle of a Meyer's lachrymal syringe filled with a 2 per cent. solution of **Cocaine** is passed through the lower canaliculus into the sac, the punctum being dilated if necessary, but not slit for its admission. The cocaine is now syringed into the sac, and if it passes into the nose there is obviously no tight stricture requiring probing. It may, however, regurgitate through the upper punctum, which proves there is an obstruction in the duct but does not demonstrate its nature. In either case one proceeds to wash out the sac with an astringent lotion, 2 grains of **Sulphate of Zinc** to the ounce is sufficient, until the fluid that escapes is quite clear. Where the fluid passed readily into the nose a cure will speedily follow a few syringings at a few days' interval, and often even after one single syringing. In the other case where an obstruction exists the same treatment is to be pursued until the muco-pus has given place to clear mucus. This will take place after two or three sittings, and if the contents of the sac cannot be

evacuated by pressure into the nose, it will be necessary to pass one of Bowman's small probes. This should be done a minute after the injection of the cocaine, which facilitates the passage of the probe and minimises the pain ; after withdrawing the probe the astringent lotion will pass readily into the nose. At the next sitting should the cocaine not pass, the probe must again be introduced and be followed by syringing. Usually three or four probings will suffice ; often only one is required to re-establish the passage. It is therefore obvious that the obstruction is not due to a very tight stricture, and in all probability it is due to the swollen mucous membrane and turgid sub-mucous tissue. As soon as the passage is free and the mucus clear the patient is placed in a position to carry on his own cure, which consists in keeping the sac constantly empty by repeated pressure at short intervals during the day time, and if possible, by constant pressure with a compress bandage at night. The sac must be syringed out each day, but the patient is soon taught to do this for himself. Until the sac re-contracts and resumes its normal calibre the cure will not be complete, and it therefore follows that the longer the disease has existed and the larger the sac, the more protracted will be the recovery. Therefore every epiphora should be treated and cured before a mucocele has had time to form.

FEVER. (See Special Articles.)

(Vol. 1889, p. 43.) **Veratrum Viride**, 1% solution, gtt. x to xx, in early stage of fever depending on gastric derangement.

FISTULA IN ANO (and Abscess). (See also "Abscess" and "Anus, Artificial.") *Herbert W. Allingham, F.R.C.S.*

In the last issue of the "Annual" a sketch was given of the many causes and the respective treatment of the various forms of rectal abscesses and fistulæ in ano. It was pointed out that unless an abscess is freely laid open on the first signs of the formation of pus, burrowing may follow, and a fistula may result. The main kinds of fistula were stated to be the complete, the blind external, and the blind internal. No form of fistula is safe to leave untouched for long, but the blind external is the best suited to a policy of masterly inactivity. This variety may occasionally be cured by an injection into the sinus of a strong solution of **Carbolic Acid** or of **Nitrate of Silver.** This failing, the blind external must be operated on like the complete and blind internal kinds, which always require operation. The main sinus must be thoroughly divided, and any lateral sinuses must be sought for ; it is of high importance to deal thoroughly with side sinuses, for unless they are laid open the fistula will not be cured; further, all over-lapping pieces of skin should be removed. In women, if the sinus is near the

perinæum too free incision may lead to incontinence of fæces. Worms very frequently cause fistula in children, and the removal of the cause will often cure the disease.

The Question of Operation upon Fistula in Phthisis.—This subject has been fully discussed in a paper read before the Medical Society during the past year. The writer pointed out the contradictory opinions on the question, which are found in the text-books. The surgeon and the physician were urged to consult together as to the treatment of these combined maladies, instead of acting on individual initiative. A table was then given of the respective characteristics of fistula and the neighbouring parts in otherwise healthy persons and in phthisical patients. This complication of complaints was then classified under these heads: (1,) Fistula in conjunction with active tuberculosis; (2,) Fistula in conjunction with chronic phthisis; (3,) "Strumous fistula" (sometimes called scrofulous phthisis). In the *first* kind the tubercular disease is active, the patient has not a long lease of life, and a tubercular ulcer of the rectum has developed into a blind internal fistula, with a large internal opening and a cavity into which fæces pass and cause great pain. An operation for cure is here out of the question; but much suffering may be spared and the patient's short term of life rendered easier, if an incision is made from the outside into the cavity of the fistula and the accumulated fæces are let out. In the *second* kind phthisis is not very active, but the fistula is burrowing and discharging. Relief of the fistula will stop the drain on the system and give the lung a chance of recovery. The main sinus should be laid open, the external sphincter divided as little as possible, and the edges of unhealthy skin cut off. In the *third* kind, though there are signs of phthisis or strumous disease in the family, in the patient the fistula is the only evidence of a phthisical diathesis. Unless this fistula is speedily attacked in the ordinary way, it may become the focus of active tuberculosis, which may invade other organs.

REFERENCE.—"Med. Society Reports," 1890.

FLAT-FOOT. (See "Orthopædics.")

FRACTURE (Ununited). *W. J. Penny, F.R.C.S.*

The Grafting of Rabbit's Bone.—Prof. A. F. McGill, of Leeds, has successfully adopted this procedure. He remarks that the treatment of ununited fracture of one of the bones of the forearm has always been unsatisfactory. The reason is not difficult to find. In performing the usual operation of resection, it is necessary to remove portions from the end of each fragment, and it is then impossible to get the two portions into apposition. If the radius is broken the ulna prevents apposition,

and if the ulna, the radius. To overcome this difficulty it has been proposed to cut down on the unfractured bone and remove a piece corresponding in size to the gap left by the resection. The bones being then wired there seems to be no reason why union should not occur. "I have treated one case in this way," says Prof. McGill, "but the result was unsatisfactory. When the case which is the subject of this paper came under my care, it occurred to me that it was advisable to follow the line of treatment first suggested by Dr. MacEwen in a case of destruction of the shaft of the humerus from acute necrosis—viz., the building up of new bone by the transplantation of bone fragments. The fragments in my case were taken from a young growing rabbit. The following are the notes taken by Mr. Kellett :—

"J. N——, aged twenty, was admitted into the Leeds Infirmary, under the care of Mr. McGill, on March 9th, 1889, suffering from an ununited fracture of the right radius. In February, 1888, he fractured his right forearm ; the fracture was compound, the wound being on the radial side. Through the wound the broken ends of the radius protruded. The ulna united perfectly, but the fragments of the radius would not join. Three months after the accident a surgeon exposed the ends of the bone, refreshed them, and wired them together. The wound healed, but the fragments did not unite. On admission, the radius was found to be fractured at the junction of the lower with the middle third. Over this position is the scar of a perfectly healed wound about two inches and a half in length. The two fragments of the radius are absolutely ununited, the utility of the forearm is much impaired, flexion of the fingers and adduction of the thumb being most imperfect. On March 19, an Esmarch's bandage having been applied, Mr. McGill made an incision two or three inches in length in the situation of the old scar. Having exposed the ends of the bone, he found that there was no sign of union, and that the two fragments were rounded at their extremities and covered by a thick membrane resembling periosteum. This was removed by means of a file, and bone tissue was thus bared. When this part of the operation was complete, an interval of about three-quarters of an inch was left between the fragments. In the meantime a rabbit, six weeks old, had been killed, and small portions, one or two lines in length, had been chiselled from its femur. With these the interval between the fragments was filled up, thirteen pieces being inserted. The bones were not wired together. The skin wound was stitched up tightly with numerous catgut sutures. No drainage-tube was used. Firm pressure was applied by means of salicylic wool and bandages, and the

forearm was placed on an anterior splint. The elastic tourniquet was not removed till the dressings were applied. On March 29, the tenth day after the operation, the wound was dressed for the first time. There was no suppuration and very little discharge; the wound had healed, except a small superficial spot. The wool dressings were continued till April 16, when there was slight irritation of the skin; they were consequently discontinued. The patient left the hospital on April 27 with the bone firmly united. In August he was shown at the meeting of the British Medical Association, when the injured arm was as useful as the other."

REFERENCE.—"Lancet," Oct. 26, 1889.

FRAMBŒSIA.

Synopsis.—(Vol. 1889, p. 255.) Tonics; apply disinfectants, *e.g.*, Iodoform, Carbolic Acid, or Boracic Acid lotions.

FRONTAL SINUS (Distension of). *W. Lang, F.R.C.S.*

TREATMENT.—A free opening having been made through the skin over the most prominent portion of the swelling, and the sinus completely emptied of its contents and then washed out, the finger is next passed into the opening and the cavity thoroughly explored. To do this satisfactorily it may be necessary to remove a portion of the outer bony wall of the sinus; and where the distension has been so great and slow as to considerably displace the globe, a free removal of the bone is advisable to allow the globe to return to its normal position. The finger is now to be employed in determining the most dependent point in the sinus in contact with the nose. A strong pair of dressing forceps is forced through the wall at this point into the nasal cavity and the opening enlarged by picking away pieces of the surrounding bone. In selecting this point the patient's recumbent position when under chloroform must be borne in mind, as the point selected must be most dependent when the patient is erect. A piece of thick lead wire is now passed into the nose through the external opening and fixed against the forehead by a piece of strapping; a short drainage tube which leads only from the skin into the sinus is fixed beside it and the external wound closed. If the opening into the nose is sufficiently large the lotion used to irrigate the sinus for the following ten or fourteen days will readily escape through the nostril and the wire drain will ensure its keeping open. At the end of that time, or a little later, both wire and drainage tube may be withdrawn and the external opening allowed to close.

FURUNCULOSIS.

Synopsis.—(Vol. 1889. p. 256.) Fresh Yeast, half a wineglassful night and morning (Brocker); Calcium Sulphide, gr. $\frac{1}{10}$ sec. vel. 3tis. hor.

(Ringer); **Tar Water** up to a quart a day (Hardy); Duhring recommends **Arsenic**, and Piffard uses **Fellowes' Syrup**; application of **Nitrate of Mercury Ointment** (Kenner).

(Vol. 1890, p. 264.) *Post-eczematous*: To mitigate and avoid this, incorporate **Carbolic Acid** or **Thymol** in the ointments used for the eczema; if boils threaten, add a minute quantity of **Corrosive Sublimate** to **Oxide of Zinc Ointment**, and give **Calcium Sulphide** internally.

GALL BLADDER (Surgery of). *A. W. Mayo Robson, F.R.C.S.*

Dr. Edler, of Metz, in the "Archives für. Klin. Chir." vol. xxxiv., says, "That injuries of the gall bladder are by no means absolutely fatal, 25·8 per cent. resulting in complete cure, such wounds necessitating neither suturing nor cholecystotomy." Whereas Dr. Schachner recommends in wounds of the gall bladder, the closure of the perforations by either the Czerny suture or Rydygier's modification of the latter, using the continuous suture in the first row and the Lembert in the second.

An important paper, by Dr. Wm. Osler, of Baltimore, "On the Symptoms of Chronic Obstruction of the Common Bile Duct by Gall Stones," appeared in the "Annals of Surgery," for March 1890, in which he says, "That the combination of the following symptoms is characteristic of the existence of gall stones in the common duct, and is therefore of value in distinguishing between that form of obstruction and that due to malignant tumour: (1,) Jaundice of varying intensity, deepening after each paroxysm, and which may persist for months or even years; (2,) Ague-like paroxysms characterized by chill, fever, and sweating, after which the jaundice usually becomes more intense; (3,) At the time of the paroxysm, pains in the region of the liver with epigastric disturbance.

A paper on fourteen cases of Cholecystotomy was read by the author at the Clinical Society, on Oct. 20th, 1889. All the patients recovered who were operated on for gall stones. In one case of persistent jaundice, associated with malignant disease, trouble ensued through the oozing of blood, but in another case of the like nature the difficulty was overcome by arresting the hæmorrhage, by means of ligatures instead of by forci-pressure, and then no secondary bleeding ensued. In one case, the opening in the gall bladder could not be made to reach the parietes; the omentum was therefore brought up and stitched between the parietal peritoneum and the opening in the gall bladder, thus overcoming the difficulty by omental grafting. In two cases, gall stones had to be crushed in the ducts. The writer also gave another paper in October, 1890, before the Leeds and W. R. Medico-Chirurgical Society, "On the performance of Cholecystotomy on the Strength of Symptoms without Physical Signs." He gave

nine cases without a death, in addition to the fourteen which have been mentioned in a former paper.

Dr. Roux in the "Revue Med. de la Suisse Romande," Oct. 10th, 1890, gives an account of two successful cases of cholecystotomy in which the gall bladder was opened, the stones removed, and the walls of the bladder repaired by first suturing the mucous membrane next the seromuscular coat, and lastly the serous coat. In his remarks on these operations he maintained that this "ideal cholecystotomy" is much less dangerous than other surgeons have thought.

The writer also reported before the Royal Medical and Chirurgical Society, a successful case of cholecystenterostomy, it being the first of the kind performed in England and the only one done for biliary fistula. In this patient all the bile had flowed through the fistula for fifteen months, thus enabling numerous observations to be made on the bile flow. The result of the observations was given in a paper before the Royal Society on April 24th, 1890.

The following were the conclusions arrived at: (1,) The bile is probably chiefly excrementitious, and like the urine is constantly being formed and cast out; (2,) Though the bile probably assists in the absorption of fats, its presence in the intestine is not necessary for the digestion of such an amount of fat as is capable of supporting life and keeping up nutrition; (3,) Increase in body weight and good health are quite compatible with the entire absence of bile from the intestines; (4,) The antiseptic properties of the bile are unimportant; (5,) Whatever little antiseptic quality bile may have is probably derived from its admixture with the gall-bladder fluid; (6,) The supposed stimulating effect of the bile on the intestines is not necessary for a regular action of the bowels; (7,) The quantity of bile excreted in the twenty-four hours during health in a person of average weight, may vary between 39 ounces 4 drachms, and 25 ounces 6 drachms, with an average of 30 ounces; less the 2½ ounces of fluid secreted by the gall-bladder; (8,) More bile is excreted during the day than at night, the excess varying between 5 ounces and 3 drachms; (9,) The excretion of bile seems to go on constantly and with great regularity; (10,) The excretion is apparently not materially influenced by diet; (11,) The pigment of fresh human bile is biliverdin; (12,) The supposed cholagogues investigated seem to rather diminish than increase the amount of bile excreted.

An elaborate research on the operation of cholecystenterostomy has been published by Dr. Delageniere, of Paris, in which he gives an account of all the operations, seven in number, which have been performed.

GASTRIC CATARRH.

Synopsis.—(Vol. 1889.) **Kava-Kava**, grs. jss ter die in chronic catarrh (p. 50); **Lycopodium Tincture**, gtt. xx to xxx in gastric catarrh associated with excess of lithates in urine and flatulent distension of transverse colon (p. 52); **Pichi Fl. Ext.**, ♏xv to 5j as stomachic tonic (p. 61).

GASTRIC NEURASTHENIA. *Dujardin-Beaumetz, M.D.*

The close relations that exist between the diseases of the stomach and diseased conditions of the central nervous system have been recognized from remote antiquity, and the ancients happily characterized this connection by applying the term hypochondriasis to the group of nervous phenomena which result from certain gastro-intestinal troubles.

Classical works are full of passages which bear on this connection between gastric affections and nerve troubles.

Hippocrates in his work "De Morbis" expresses himself thus: "Those who are suffering from this malady (hypochondriasis) cannot live without eating, nor can they tolerate the nourishment they take; their entrails make noises and the cavity of the stomach gives them pain. They vomit sometimes a kind of humour, sometimes other matters. They bring up bile, saliva, phlegm, and acrid matter, and after vomiting they appear to be better. But when they have taken food they are troubled with risings and belchings, they get a headache, they suffer from stinging all over, sometimes in one part, sometimes in another, as though they were pricked with needles." This is a perfect clinical description of the condition, and there is not a single word to withdraw from it; as Hippocrates observed neurasthenias of gastric origin, so we see them at the present day.

Galen is clearer still. He shows that not only hypochondriasis, but other neuroses as well, such as epilepsy, may result from disorders on the part of the stomach, and he cites the case of a young student who had acquired epileptic attacks that he considered to be due to the stomach, and the treatment he prescribed and which brought about the cure is quite analogous to that which we employ to-day for the cure of diseases of this nature. One may judge from the following passage that I quote: "I directed him," says Galen, "if he was not thirsty, to eat about ten o'clock in the morning carefully prepared bread; if he was thirsty, to drink water with a little light wine added."

These facts which were so well known in olden times appeared to have been forgotten for a long time. However, physicians who have devoted themselves to affections of the nervous system revive the observations of classical physicians, and have attempted to connect a number of these nervous disorders with the stomach. These facts

become more evident when under the vague term of neurasthenia, or nervousness, one tries to group the nervous phenomena which differ from real hysteria and from melancholia.

But long after Galen, medical writers were in the habit of classing under the term hypochondriasis, that is to say, disease having its origin in the hypochondrium, many of the disorders of the nervous system. In later times Sydenham distinguished between hypochondriasis and another nervous condition that he compared to a proteus taking an infinite variety of forms, to a chamelion ever varying in colour ; and which is in fact hysteria. More recently still Whigt described a third form of nervous disorder which was neither hypochondriasis nor hysteria ; this third neurasthenic condition it is which originates in stomach troubles.

Beard, too, who was one of the first to employ this word neurasthenia, directed attention to a gastric neurasthenia, that is to say, originating in functional disorder of the stomach.

This theory Leven has recently taken up anew, and has assigned to modifications of the nerve cells of the solar plexus a preponderating *rôle*. It is the irritations of these cells, according to him, that determine the disorder in the gastric mucosa, and in the neighbouring organs.

I protest that this explanation explains nothing. To say that the irritation of the solar plexus entails disorders of the mucous membrane is a statement that requires more precise anatomical demonstration than that furnished by Leven. One wants to know what is the cause of this irritation of the solar plexus.

After the investigations of Bouchard on dilatation of the stomach and the more exact knowledge of toxines which the animal economy secrete, and the more recent works of Annaud, Gautier, and of Brieger, this question of gastric neurasthenia takes a new direction.

The essential features of the group of symptoms are as follows : they turn upon the gastric, intestinal and abdominal functions, upon general disorders, and lastly upon nervous phenomena.

As regards the abdominal discomfort, over and above dilatation of the stomach, one most constantly finds constipation, congestion of the liver, and in the case of females a right renal ectopia. As for the general symptoms, one notes a tendency to coldness, especially of the extremities ; the hands are cold and clammy and the fingers show special deformities (*nodosités* of Bouchard). Just as in the case of nervous symptoms, they present most curious types, but nevertheless, without showing the characteristics of hysteria. But the predominating

features are the following: (1,) General enfeeblement of the bodily powers; (2,) Numerous neuralgic pains; (3,) At length a tendency to sadness and gloom.

Many hypotheses have been put forth to explain the relation of cause and effect that can exist between a dilated stomach and these nervous disorders. They may be arranged under three chief heads: (1,) The mechanical theories; (2,) The humoral theories; and (3,) The nervous theories.

It is Glénard who has most forcibly insisted on the mechanical theory. Taking as his standpoint the normal arrangement of abdominal viscera, he has maintained that dilatation of the stomach was always the consequence of displacement of certain portions of the intestine with reference to other portions, a displacement to which he has applied the term *ptosis*. Dilatation of the stomach, then, would be a splanchnoptosis resulting on an original displacement of the right colic flexure. This enteroptosis would be the essential factor in dilatation of the stomach and of renal ectopia, which could only be a *nephroptosis*.

This ingenious theory has not been allowed to pass unchallenged. In a recent purely anatomical work, Dr. Formont has held that the basis of Glénard's theory was not correct, and that he has not found in the normal state the anatomical arrangement that is the very foundation of the whole of Glénard's theory.

Bouchard's theory is much more in accordance with physiology, and it is based on facts required by the study of biological chemistry, and also from therapeutical results. According to Bouchard, dilatation of the stomach is the point of departure of imperfect digestion of food; this gives rise to an increase in the formation of gastric and intestinal toxines, and these toxines circulating in the body produce an auto-intoxication, manifesting their presence by those symptoms which we observe in the subjects of gastric neurasthenia.

The liver, that barrier which opposes the circulation of toxines in the organism, is overcome by the resulting abundance of toxines that its function is to destroy. This gives rise to hepatic congestion so frequent in those who have dilated stomachs, and it is this congestion, still further increased by the action of stays, which brings about the right renal ectopia in the case of females.

This theory appears to me to be correct, and it renders the symptoms observed perfectly intelligible. Only it does not explain the commencement of the dilatation of the stomach, and it is here that the nervous theories come in, theories adopted by Bouveret in his recent work on neurasthenia. In fact, to those who adopt the nervous origin

of gastric ectasia, the dilatation is only a consequence of paresis of the muscular coat of the stomach having its point of departure in a morbid state of the nervous system still imperfectly defined. Then supervenes the series of troubles caused by auto-intoxication.

This dilatation would appear to be an hereditary affection, and I have seen numerous examples of it. It may remain latent for a long time; then the neurasthenic phenomena manifest themselves slowly. In these cases I am disposed to admit that it is a result of hereditary influence, probably imparting to the nervous system that which originates this dilatation.

When we take into consideration all those cases of dilatation in patients presenting phenomena of nerve disorders, we see that we can group them into distinct classes. In some the dilatation of the stomach does not appear to have any influence on the nervous symptoms. We may say that the nervous troubles and the disorders of dilatation of the stomach go hand in hand without either influencing the other, and if, in these cases, we intervene with therapeutical measures directed solely against the dilated stomach, we shall relieve the digestive troubles without modifying the intensity of the nervous phenomena.

In another group, on the contrary, there is an obvious and undeniable connection between the functional disorders of the nervous system and the dilatation of the stomach; and it is enough to step in with appropriate therapeutic measures, directed exclusively against the dilatation of the stomach, in order to lessen and entirely dispel these nervous troubles. These troubles may present a slow course. This happens most frequently in the neurasthenia that I have just been referring to; or again on the other hand, they may exhibit a rapid course, characterized by tetaniform convulsions, analogous to contracture of the limbs. Following Küssmaul, I have brought forward several cases of these contractures ending in death.

May I draw attention to the most important sign of dilatation of the stomach, viz., the *bruit de clapotement*. In order to diagnose dilatation of the stomach this bruit must be perceived below the oblique line which passes from the borders of the false ribs on the left side to the umbilicus. Any *bruit de clapotement* heard above this line must be considered as physiological.

It is not always easy to perceive this *bruit de clapotement* even in the case of dilatations that are considerable. For this there are two special reasons: (1,) An empty stomach; (2,) Chiefly the contraction of the muscles of the abdomen, and in particular of the recti muscles.

It is easy to remedy the first cause by making the patient drink

a glass of cold water while fasting, but it is more difficult to overcome the second cause. You will generally succeed, however, by making the patient take a deep breath, or by pressing suddenly with one or two fingers over the abdominal wall, or by seizing with both hands the two sides of the abdomen, imparting to the whole belly sudden movements, just as we should do in order to obtain hippocratic succussion in hydro-pneumo-thorax.

Do not omit to carefully examine the iliac fossæ. Often you will find there a bruit of gaseous collision, which by its *timbre* may be differentiated from the *bruit de clapotement*. This bruit is evidence of dilatation of the large intestine.

What Treatment gives the best Results in these Cases of Neurasthenia of Gastric Origin?—It is the treatment which has for its basis gastro-intestinal antisepsis, antisepsis which is realized by the following methods: (*a*,) The administration of antiseptics such as **Salicylate of Bismuth, β-Naphthol, Salol**; (*b*,) Evacuation of toxines by laxatives suited to subjects of constipation, and, in neurasthenic patients with diarrhœa, the use of intestinal lavage with solutions of **α-Naphthol,** 1 in 1000; (*c*,) Giving a healthy diet, which reduces to a minimum toxine forming food, a condition which is realized by the adoption of vegetarian diet composed of eggs, farinaceous foods, green vegetables, and fruits. Avoiding fish, game, shell fish, crustaceans, and old cheese. The use of meats rendered undecomposable by prolonged boiling. Intervals between meals. Decreasing the amount of fluids drunk. Added to this medical antisepsis. Massage then as an aid to treatment. Gymnastics and hydro-therapy.

GASTRIC ULCER.

Synopsis.—(Vol. 1889, 261.) **Iron** (perchloride); **Hydrochloric Acid**; not to be used in anæmia; **Bicarbonate of Soda** and **Bismuth** form a mechanical coating for mucous membrane; but **Carlsbad, Ems,** and **Tarasp** waters are better. Washing out the stomach with **Common Salt** solution is useful in old cases. Lavage with solutions of **Sulphate, Chloride, Borate,** or **Bicarbonate of Soda,** ʒj or ij to the quart of warm water. If antiseptic or sedative solutions are required, use **Resorcin,** 1%; **Boric Acid,** 1%; **Creasote,** 1%; **Carbon Disulphide Water** (j part of a solution containing xv grs. to the quart to ij parts water); **Charcoal Powder** (ij to iv tablespoonfuls); **Chloroform Water** (saturated solution), or **Bismuth Sublimate** (ij tablespoonfuls to the pint). N.B. **Resorcin** or **Carbolic Acid** must be carefully removed. **Amylene Hydrate,** iijss grammes as hypnotic in gastric ulcer (p. 13).

GLANDERS.

Frank J. Wethered, M.D.

Although glanders is a rare disease, yet a practitioner may occasionally meet a case, and be rather in doubt as regards the best treatment. Bollinger advises **Carbolic Acid** and **Iodide of Potassium,** whilst the

Messrs. Gamgee speak of **Arsenic** in combination with **Strychnia** as having sometimes exerted a remarkable influence.

Dr. Gold publishes in the "Meditsinskoë Obozênie" a detailed account of a case of glanders which was successfully treated by a prolonged course of **Mercurial Inunctions**. The patient was a young peasant, and though he was unable to trace his illness to any contact with glandered horses, experimental observations on guinea-pigs proved quite clearly that he was suffering from glanders. Half a drachm of mercurial ointment was rubbed into the skin twice a day, and the condition of his mouth properly attended to. He was also kept on highly nourishing diet. The tumours on different parts of the body were opened, and in some cases the edges of the wounds pared or touched with the actual cautery, antiseptic dressings being employed throughout. No less than sixty-eight frictions were employed, and the patient was kept five months in hospital before being discharged cured. The good effects of the treatment began to show themselves after twenty inunctions, the tumours becoming softer and the fine crepitation in the lungs disappearing. Dr. Gold points out that no reliance should be placed on the denial of patients of having had to do with diseased horses, the only sure guides to a correct diagnosis being bacteriological observations and the experimental infection of animals with the purulent matter from the tumours. Again, he thinks this case shows that even very severe cases of glanders may sometimes be treated successfully by a persevering employment of mercury, either by inunctions or hypodermically.

REFERENCE.—"Lancet," Sep. 28, 1889.

GOITRE (Cystic). *P. Watson Williams, M.B.*

A new method of treating certain cysts, such as cystic goître, ranula, etc., with **Chromic Acid** is described by Dr. Edward Woakes. The method suggested itself to him by his experience about six years ago, when he had under treatment a woman, aged fifty, for fibro-cystic goître involving the right lobe of the thyroid body. The cyst, which extended to within an inch of the angle of the jaw, had been tapped and injected with concentrated solution of tannin, with the result of securing apparent obliteration of the cavity. She continued under occasional observation while the fibrous portion of the tumour was dealt with, when, after an interval of some months, it became apparent that the cyst was refilling. In the course of a few weeks the contents, consisting of a thin purulent fluid, found an exit through the cicatrix left after the original tapping, with the consequent formation of a sinus, through which the offensive fluid continually issued. Thus was established the exact nuisance which the method originally adopted

was designed to obviate. The difficulty of treating the cyst through the sinus was increased by the fact that during the lengthened absences of the patient, a portion of its now tortuous course passed through recently-formed and still growing hypertrophic gland-tissue. Under these circumstances Dr. Woakes adopted the plan of passing a probe, previously dipped for three inches of its length into a saturated solution of chromic acid, through the sinus into the cyst cavity. This was done several times in three successive weeks, when, after an interval of non-attendance of some five weeks' duration, a brown, tough material was found protruding from the wound. Traction on this drew out a rolled-up mass of the same substance, which when spread out had the appearance of leather, and was about the size of the palm of one's hand. It was undoubtedly the wall of the cyst, altered and probably destroyed by contact with the chromic acid, and thereafter got rid of as described. It is needless to state that after this deliverance the cystic part of the trouble was ended. The enlarged isthmus and right lobe of the thyroid body required a period of further treatment, but ultimately recovered. It should be understood that no such extrusion of a well-formed cyst wall occurred in any subsequent case treated on the basis furnished by that just recorded, a divergence due no doubt to the improvement in the method of using chromic acid adopted as the outcome of this first crude experiment. In fact, the original cyst wall in the foregoing case had been converted into a pyogenic membrane by the early treatment, and this, being deprived of its vitality by the action of chromic acid, was at a later period cast off by the adjacent healthy tissue.

Dr. Woakes records other cases in which the cyst was cured by the application of chromic acid.

Terrillon, surgeon to the Salpêtrière, has published, in the "Bulletin Général de Thérapeutique," a communication in which he advises the **Iodine** injections in bronchocele as more likely to give curative results than those of tincture of iron or of ergotin, counselled by former surgeons; and he gives minute directions how to carry out this treatment successfully.

In order properly to practise this injection, says Terrillon, there are three points indispensable to know: (1,) The operator must be sure that he has penetrated the substance of the tumour before pushing the injection; (2,) He must avoid, as far as possible, transfixing the veins which ramify in the cellular tissue in front of the neck. In fat patients the veins are not very apparent, and it is desirable, before inserting the needle, to find a place where no veins shall be in the way. The patient should be made to take a full breath, during which the swollen jugulars

become prominent, and they can then be very easily avoided; (3.) The third important point is to have a hypodermic syringe that is perfectly clean, in order to avoid the introduction of infectious germs. Terrillon recommends that the syringe with its needle should be left a certain time in boiling water before being used.

To avoid the infiltration of liquid in the cellular tissue of the neck it is necessary to insert the needle to the depth of at least two or three centimètres, and to be assured, by the movements impressed on the tumour and by the feel of the needle, that the latter has penetrated the glandular substance. Having introduced the needle deep into the thyroid body, the surgeon unscrews and removes the syringe before making the injection, in order to see whether any blood flows by the cannula. This precaution is needful in order to avoid the injection of iodine into the interior of a vein. If blood should flow at the point of puncture another place is chosen, and the same manœuvre is repeated.

The syringe is then readjusted, and ½ a gramme of pure **Tincture of Iodine** is injected into the tumour. If this injection is well supported, if the patient experiences no other symptoms than a slight pain with a little swelling, the next time a whole syringeful is injected. After having made the injection and introduced the desired quantity of liquid into the tumour, the needle is not immediately removed, but is left a few seconds, in order that the liquid may be sufficiently diffused into the parenchyma of the gland, and that it may not flow into the subcutaneous cellular tissue.

Terrillon recommends making but one injection at a time, and to have four or five days' interval between the injections, in order to guard against the danger of iodism. A little pain immediately after the operation at the side of the puncture, followed by shooting pains into the back of the neck, the lower jaw, or even the shoulder, should not give alarm, as these pains are rarely of long duration. Sometimes the patients taste iodine in the mouth after the injection, due to the elimination of iodine into the saliva. A little swelling follows the injection; this rarely goes on to suppuration.

In some instances a cure has been known to follow a single injection, but in others from fifteen to twenty have been necessary to reduce the size of the gland to its normal dimensions. The effect of the iodine is to cause the elements of the tissue to undergo fatty degeneration and absorption, and the irritation leads to the formation of cicatricial tissue, the contraction of which brings about a diminution in the size.

Symonds reports favourable results in eight cases of cysts and adenomata of the thyroid treated by **Extirpation** of the growth. Six

of these cases occurred in women and two in men; one, a woman, was fifty-four years old; the others were under thirty. In one of the cases recorded the entire thyroid was removed with a tumour that lay partly beneath the sternum. The lobes were empty, and Mr. Symonds regretted that he had removed them. The operation was undertaken early in 1883, before the cachexia following removal of the whole gland was generally known, and the wide oozing surface left after removal of the growth seemed to promise hæmorrhage. In the next case there was a solid tumour behind the right lobe, causing dysphagia so complete that the patient had to be fed with a tube. The lobe and tumour were removed by an incision to one side of the median line over the growth. Some difficulty was experienced in obtaining sufficient room, and this was due to the incision being lateral. On dissecting this tumour, it was found to be encapsuled and to be situated behind, and might easily have been enucleated. Consequently, in subsequent operations Mr. Symonds decided to first search for the capsule and then enucleate. In four subsequent cases this was done, and the growths, in one case solid, in the others partly cystic, were removed without the loss of any blood, and with great facility. As a rule, at most three small vessels required ligature. In one the lobe had to be raised up before the cyst could be reached. In the remaining case the lobe was removed because it appeared to be blended with the cyst; it turned out subsequently not to be the case. All the patients recovered with primary union, and most required but one dressing subsequently to that made at the operation.

The method he employs may be thus summarized: Make in every case, no matter where the tumour be situated, a median incision; it gives more room and leaves less scar, and when the deep fascia is opened the largest growth can be brought to the median line. To expose certainly and definitely the cyst or adenoma—*i.e.*, its fibrous wall—and then to dissect off the gland. If the wall be followed closely no bleeding or trouble is encountered. If the white glistening wall of a solid tumour or the bluish wall of a cystic one is not seen at once, then the edge of the gland must be sought and raised up till the capsule is seen. If a dissection is commenced outside this, severe bleeding may be encountered. In the case of a cyst, Mr. Symonds advocates opening it early, after sufficient of the wall has been exposed to secure with forceps, and dissecting back the thyroid just as in ovariotomy. By this means the operation can be performed through a smaller opening, and the resulting scar is slight.. All the cysts contained in the wall a variable amount of gelatinous glandular material, which showed the usual veins lined by cortical or columnar epithelium,

and this structure was exactly the same as in the solid forms. Mr. Symonds regards as cases suitable for operation those in which the growth is localized, well defined, and limited to one side. In no one of his cases were there two tumours, though multiplicity should not be considered to negative operation, there being no reason why two or more localized encapsuled growths should not be extirpated at the same time. It is impossible to decide between cystic and solid forms without exploration. He holds that excision gives more speedy recovery, and is freer from danger than any other method, while the small scar resulting from injection is counterbalanced by the prolonged treatment and the often severe hectic that follows. Mr. Symonds also points out the necessity of the strictest antiseptic precautions in these cases. In all his cases except one there were symptoms sufficiently important to demand operation. The exception was that of a lady, who requested that the growth might be removed. He deprecates operation where symptoms are absent.

REFERENCES.—Woakes, "Lancet," June 21, 1890; "Therap. Gaz.," Aug. 15, 1890; Ibid., Mar. 15, 1890; Charters Symonds, "Lancet," Dec. 21, 1889.

GOITRE (Exophthalmic) (Grave's or Basedow's Disease).

P. Watson Williams, M.B.

A New Symptom in Exophthalmic Goître.—Diminished chest expansion in varying degree has been found by Dr. Louise Fiske-Bryson in all the cases examined for this symptom—a condition that has hitherto almost, if not quite, escaped attention in exophthalmic goître. It is accompanied by increased respiration, and frequently by cough. In severe cases the chest expansion on forced inspiration was half an inch, or even less, whilst an expansion on forced respiration of one inch was regarded as justifying a favourable prognosis, even in the presence of the cardinal symptoms. There was almost always some evidence of previous disease of the respiratory tract. Dr. Bryson lays especial stress on the presence of certain conditions resembling those which prevail in angina pectoris and asthma, and a peculiar catching of the breath at regular intervals when reading aloud.

The beneficial effects of **Strophanthus** in Grave's disease were briefly alluded to in the "Med. Ann." for 1890.

Dr. Hammond, referring to the use of this drug, reminds us of the physiological experiments of Bahadhurji and Langgaard, of Berlin, who found that strophanthus has a marked central effect upon the vagus. They report also that the respirations are at first increased, but are subsequently slower and weakened. This may be the result on the healthy organism, but in exophthalmic goître Dr. Hammond finds the

respiration becomes slower and stronger, while the power of expansion becomes greater, from which he concludes that strophanthus excites the central respiratory centre as well as the vagus centre. Dr. Fraser and others have shown that strophanthus acts on the vaso-motor centre, prolonging the diastole of the heart, and causing the arteries to become contracted. "If," says Dr. Hammond, "these statements are true, we have in strophanthus a remedy which should exert a powerful influence in subjugating the four principal symptoms of exophthalmic goître, viz., the exophthalmos, the enlargement of the thyroid, the cardiac rapidity, the shortened respirations, and the diminished chest expansion."

Dr. Brower's favourable results in three cases were noted in our last edition. Dr. Hammond has found this drug beneficial in a few cases. Dr. Janeway gives the tincture in 5 minim doses three times a day, gradually increased if necessary. Of eight cases in which he had used it, he had no information of the result in three; in two a cure had occurred; the only other remedy employed being *iron*. In one other, complicated with mitral insufficiency and considerable dilated hypertrophy of the left ventricle, there had been a cessation of the palpitation and a considerable improvement in the heart's condition. In the seventh case recovery had occurred, but **Galvanism** was also used. The eighth patient had such irritable vomiting that it was impossible to give the remedy, or even to administer much food, by the mouth, and she succumbed to the exhaustion of the disease and vomiting, in a neighbouring city, after she had passed from his immediate observation. On the whole, the results from strophanthus had been such that he could add his endorsement to that of others of its utility in this disease. It had succeeded in cases where digitalis had failed, and he preferred it to aconite as less dangerous, particularly in cases where the heart was somewhat enfeebled.

We have recently used **Cactus Grandiflorus** with good results. We begin with 3 to 5 drops of the tincture every four hours, reducing the dose somewhat as soon as the pulse rate approaches the normal. In some cases we have found this remedy superior to strophanthus or spartein. We have also tried ouabain in this affection, but without obtaining any great measure of success.

Of **Carbazotate of Ammonium** Dr. Hammond writes: "As a remedy for exophthalmic goître we are indebted for its discovery to my clinical assistant, Dr. A. C. Combes. He discovered it accidentally in the following way: a patient afflicted with exophthalmic goître consulted him nearly a year ago. She had been under the care of a well-known New York physician, who, not recognizing the nature of her complaint,

and thinking she was suffering from some febrile disease, gave her the carbazotate of ammonium. She was subsequently told the name of her disease, and, feeling dissatisfied with her physician, she left him and consulted Dr. Combes. Dr. Combes found that under the drug she was taking her symptoms were disappearing. He continued the remedy with excellent results, and has since used it on five cases, and in all of them with benefit. I have used it on three cases of my own, with, I think, decidedly good results. Its use is, however, limited, and for reasons which I mention below cannot be given indefinitely. Following the directions of Dr. Combes, I have given the remedy in pill form (each pill containing 1 grain of the drug) three times a day for the first week. In the second week 2 pills three times a day are given, and, if it can be borne, 3 pills three times a day in the third week. The physiological effects of the drug are very decided. They were observed by Dr. Combes, and his observations have been verified by my own. At about the end of the first week the skin and conjunctivæ assume a slight saffron colour, which deepens if the drug is persisted in. Then a peculiarly unpleasant odour emanates from the body, which is identical with that produced by dirty feet, and can be distinctly noticed if you approach within six or eight feet of the patient. Following this, severe gastric disturbances show themselves. It is rarely possible that patients can take this remedy longer than three weeks, but while they take it the effects upon the heart, the respiratory tract, and the exophthalmia are undoubted."

REFERENCES.—Fiske-Bryson, "New York Med. Jour.," Dec. 14, 1889; Hammond, "New York Med. Jour.," Jan. 25, 1890; Bahadhurji, "Ref. Handb. Med. Scien.," vol. vi., p. 664; Janeway, "Med. News," Aug. 10, 1889.

Synopsis.—(Vol. 1890, p. 276.) Injections of ethereal solution of **Iodoform**; **Electrolysis** in cases of soft goitre.

GONORRHŒA. *J. Hutchinson, junr., F.R.C.S.*

The internal administration of **Salol** has been tried in an extensive series of cases by Mr. Ernest Lane. On the whole the results were encouraging, and it is stated that the drug may be given at any stage of gonorrhœa. If the latter has passed into the chronic form an astringent injection should always be combined. A dose of 20 grains may be taken thrice daily; with larger doses some carboluria is frequently observed. Out of forty cases treated by salol alone six were cured within a week, and "some improvement" was noted in twenty others. **Nitrate of Silver** used as an injection is claimed by many authorities to be one of the best remedies in the treatment of gonorrhœa. Every now and then a case of rapid cure from the injection of

a strong solution during the early stage is recorded, but this method is neither certain in its results nor free from risk. M. Diday is in the habit of using a 5 grain to the ounce solution, but does not claim to have had striking success. He hints that much stronger solutions must be employed, and instances one case in which the patient completely aborted an attack by injecting (on the fourth day when the discharge was already free) a solution of 48 grains of nitrate to the ounce. M. Malécot advocates one of 10 grains if the surgeon attempts to abort the disease, and an injection of **Salicylate of Mercury** (1 in 2000) if it is too late for this.

The number of vaunted remedies for gonorrhœa is very great, and this year has as usual seen new ones advocated. Sulphate of thallin and resorcin do not appear to have established any claim to superiority over more old-fashioned mineral astringents. In a very careful report Dr. Friedheim, assistant in the clinic of Prof. Neisser, states that **Nitrate of Silver** in weak solution (1 in 4000 to 1 in 2000) has proved the most efficacious. The injections should be administered four or six times daily at first, and their less frequent use should be kept up for some time after the discharge has ceased. Dr. Friedheim's conclusions in favour of nitrate of silver are drawn not only from some hundreds of cases, but from laboratory experiments on the gonococci and the surest means of destroying their vitality. One drawback to the use of nitrate of silver injections lies in the injurious action upon linen.

In the treatment of that most obstinate of diseases—chronic urethritis or gleet—Dr. Szadek reports favourable results from the use of sounds covered with an ointment containing from 2 to 6 grains of **Nitrate of Silver** to the ounce. The sounds are used every two or three days, and should remain in the urethra a few minutes, the time being gradually increased. Astringent injections may also be required, and the endoscope is useful in some cases for detecting granular lesions, etc. In most of the cases thus treated a cure was obtained within six weeks, sometimes in three or four. **Unna's Bougies** are composed of cacao butter (with a little white wax and Peruvian balsam) and 5 grains of nitrate of silver to the ounce. Fleiner uses a stronger preparation (20 grains to the ounce) coating sounds with the liquefied mass, and reports very good results from his experience in forty-three cases. It certainly seems preferable to employ the sounds than the soft bougies, since an incipient stricture will be thereby much benefited and possibly cured.

Can suppurating venereal Buboes be cured without Free Incision? —Many writers have answered this question in the affirmative, advo-

cating aspiration or small incision followed by injection of antiseptics. Drs. Curran and Boileau have recently claimed success in this direction, but every surgeon will admit that in some cases nothing short of a free incision and removal by knife or scraper of the necrosing glands will suffice to effect a cure. Prof. Poutain's method certainly deserves further trial. He punctures the bubo as soon as suppuration has declared itself, lets out all the pus, and then fills the cavity with liquefied **Vaseline** containing **Iodoform.** This is easily prevented from escaping by a cold antiseptic dressing which coagulates the vaseline at the narrow opening into the bubo. It may be well before the injection to wash out the cavity with sublimate solution. His results (cure within a week in over twenty cases) sound almost too good to be true. The method is practically identical with Verneuil's treatment of strumous glandular and cold abscesses.

GONORRHŒA (in Women).

Synopsis.—(Vol. 1890, p. 278.) Vaginal suppositories of **Acetate of Lead** (gr. v), and **Opium** (gr. jss) during acute stage, and of **Carbolic Acid** (gr. j), **Iodoform** (gr. iij), **Alum** (gr. x), and **Iron** (Ferr. Sulph. Exsic., gr. jss) in the chronic stages.

GOUT. *Frank J. Wethered, M.D.*

What is the Pathology of Gout?—Various theories have been suggested as to the pathology of gout. It is generally admitted that the disease depends upon a surcharging of the system with uric acid and its salts.

During the past year Sir William Roberts has read two valuable papers on this subject before the Royal Medical and Chirurgical Society. In the first he showed that uric acid was a bibasic acid, and formed two regular orders of salts, namely, neutral urates and acid urates or biurates. But in addition to these it formed a series of hyperacid combinations termed "quadrurates." The neutral urates were never found in the animal body. The biurates were only encountered pathologically as gouty concretions. The quadrurates, on the other hand, were specially the physiological salts of uric acid. The author, in the second paper, traced the changes which the quadrurate underwent in the blood, and which led up to the deposition of sodium biurate in gout. These latter changes were intimately connected with the property possessed by the quadrurates of taking up in alkaline solutions an additional atom of base, and of being thereby converted into biurates. A knowledge of this reaction permitted a coherent view to be presented of the succession of events which culminated in a gouty paroxysm. In the normal state the uric acid, which circulated in the blood as quadrurate, was at once removed un-

changed by the kidneys. But in the gouty state, either from defective kidney action or some other cause, the quadrurate lingered unduly in the blood. The detained quadrurate, circulating in a medium which was rich in sodium carbonate, was gradually transformed into sodium biurate, which was almost insoluble in blood-serum, and was, probably for that reason, difficult of removal by the kidneys. Under these new conditions sodium biurate accumulated more and more in the blood, and, when the accumulation had reached a certain point, was precipitated in the crystalline form in the joints and elsewhere, thereby determining the occurrence of a fit of the gout. This view was based on a study of the reactions of blood-serum and synovia with uric acid and the urates. A solution of 0·5 per cent. sodium chloride and 0·2 per cent. sodium carbonate was a fairly exact imitation of blood-serum in so far as its saline ingredients were concerned. And it was found experimentally that such a solution behaved with uric acid and the urates in the same manner as blood-serum itself, and in the same manner as a solution composed of all the salines of the serum in their due proportion. A solution was, therefore, prepared containing 0·5 per cent. of chloride of sodium and 0·2 per cent. of carbonate of sodium. This was called the "standard" solution. The behaviour of uric acid and the urates with this solution was studied in detail, under varying conditions of time and temperature, and with varying modifications of its composition. As to the behaviour of uric acid with the standard solution and with blood-serum and synovia, uric acid was taken up freely by these media as a quadrurate; but after a certain pause—a few hours or a few days—it was again precipitated, often somewhat suddenly, in the form of crystalline needles of sodium biurate, exactly resembling those found in gouty deposits. This remarkable reaction was held to be analogous to the phenomena of the gouty paroxysm. In gout it was assumed that the blood became increasingly charged with uric acid, until, after a certain period of incubation, sudden precipitation of sodium biurate occurred, and the "fit of the gout" was declared. Then followed a process of recovery, with restoration of the blood to a purer state.

In studying this process three stages were distinguished: (*a*,) Taking up of uric acid as quadrurate, or solution; (*b*,) Gradual conversion of quadrurate into biurate, or maturation; (*c*,) Deposition of the biurate in the crystalline form, or precipitation. The following results were arrived at as to the conditions which hastened or retarded the processes which culminated in the precipitation of sodium biurate: (1,) Precipitation occurred earlier in synovia than in blood-serum; (2,) Increased alkalescence of the media favoured the stage of

solution, but did not retard the stages of maturation and precipitation; (3,) The addition of salts of sodium hastened maturation and precipitation; (4,) The addition of salts of potassium, lithium, or magnesium had no effect either way, except potassium chloride, which appeared to retard maturation; (5,) Maturation was hastened, and precipitation occurred much earlier at 100° Fh. than at the temperature of the room; (6,) No circumstance exercised so decisive an influence on the speed of maturation, and on the time of advent and copiousness of precipitation, as the proportion of uric acid in solution. If the proportion of uric acid in solution was 1 in 2500, or over, there was observed in the middle period of maturation, on the second or third day, a copious critical precipitation; but if the proportion was 1 in 4000, or under, the precipitation was throughout gradual and scanty, and postponed to the twelfth or fourteenth day.

In his reply, Sir William Roberts pointed out that one practical outcome of the research was this, that if a patient were judged to be verging on an attack of gout he should not be allowed to take mineral waters rich in soda or lime salts.

Before leaving the subject of the pathology of gout, the recently expressed views of Sir Dyce Duckworth's are worthy of notice. Starting from the hypothesis that there is a basic arthritic stock or diathesis, he regards gout as essentially a disturbance of the central nervous system, though recognizing at the same time the solution of uric acid to the disease. He is inclined to think that the medulla oblongata is the particular centre involved.

TREATMENT.—The prophylatic treatment of gout is undoubtedly the most important. Dr. Walter Mendelson treats this portion of the subject in a very full manner in the "New York Medical Journal" of February 1, 1890. The paper will well repay perusal, but only a short abstract can be given here. He divides patients into two classes:—

(1,) Those who have no actual manifestations, but who, from heredity and environment, seem likely to become gouty later in life. (This category will comprise mostly children and young adults.)

(2,) Those in whom gout has already declared itself, but in whom we wish to stop, or at least render less often, subsequent attacks.

With regard to the first class the chief point is to attend to the general hygiene, drugs playing but a subordinate part. And here regard to diet is of prime importance, and usually we will find that our efforts will have to be directed chiefly to securing a simpler and more rational diet list.

Dr. Mendelson then gives full directions for the diet from infancy on to adult age, together with general rules for clothing, exercise, etc.

For delicate children he recommends a course of hardening by cold bathing and avoidance of all "coddling." For adults, in addition to the ordinary rules of diet an avoidance of all sweet wine, especially champagne; he advises regular and light exercise, riding, cycling, tennis, billiards, etc.

With regard to the treatment of those who have already suffered from manifestations of gout, in general it may be said that the suggestions regarding diet, exercise, etc., already laid down will again apply here. Only we will have to be more rigid in regard to diet, often to the entire exclusion of all starchy and sugary foods, or even to putting the patient upon a milk diet alone.

A novel mode of treatment, although it is doubtful whether it will come into general use, was brought before the International Medical Congress of Berlin this year by Mr. T. A. Edison, of New York; this was the application of electrical endosmosis to the treatment of gouty concretion. The girth of the little finger of the left hand was reduced 0·6 cm. after fourteen days' use of the current in a patient on whom this treatment was tried.

GOUT (in the Throat). *P. Watson Williams, M.D.*

In the "Medical Annual" for 1890, p. 279, reference was made to four typical cases reported by Sir Morell Mackenzie, and attention was directed to the extreme difficulty that may occur in arriving at a correct diagnosis of these cases. These cases were: (1,) Acute œdema of the uvula; (2,) Chronic inflammation of the posterior pillars of the fauces; (3,) Gouty deposit round the crico-arytænoid joints, causing dysphonia; (4,) Fungous ulcerations of the ventricular band resembling cancer.

In the American Journal of the Medical Sciences, Dr. A. Whitehall Hinkel calls attention to this subject as one that has hitherto received but slight consideration in laryngology. The local and surgical view has somewhat usurped the place of more general research into causes that produce effects of apparent similarity, yet of widely different origin.

Harrison Allen has reported five cases of gouty sore throat. Less well-defined forms of inflammation present certain appearances and symptoms not in themselves pathognomonic. These, taken in connection with the history and general condition, together with the results obtained by measures directed to the lithæmic state, indicate their dependence upon the so-called defective laboratory work of the liver, concerning which but little is known. The term lithæmia is tentative in character, based upon clinical manifestations solely, and applied with considerable latitude as to meaning. It is used by

Dr. Hinkel as Murchison uses it—to express a condition of suboxidation and overcharging of the blood, and excretions with excretory matter in a state of faulty elaboration, due to inherent and hereditary abnormality of function, or to prolonged exposure to depressing environment.

Starches, sugars, acid fruits, and some other ordinary articles of diet are said to produce peculiar disturbances in the lithæmic constitution. The utmost simplicity and regularity of diet will not prevent recurring exacerbations of characteristic symptoms when the pursuits are sedentary and there is unusual mental or nervous strain. There is a tendency to form uric acid in excess, together with a waste of phosphates, and digestive, mental, and nervous phenomena as easily recognizable as they are distressing.

Lithæmic manifestations in the upper air-passages fail to present conditions that invariably announce their origin, and they are not uniform in type ; at the same time, certain given appearances or symptoms are more or less connected with lithæmia and suggest treatment for that condition, whatever local measures may be indicated. A patchy congestion of the laryngeal face of the epiglottis, extending along the arytæno-epiglottic folds and over the posterior aspect of the ventricular bands, is occasionally seen in cases of irritable sore throat associated with lithæmia. There is also a harsh, dry cough, with a sense of extreme irritation about the larynx. (This patchy congestion of the mucous membrane has been observed, by means of the cystoscope, in the bladder of a lithæmic subject.) When the patchy inflammation is present there is extreme sensitiveness to astringent and stimulant applications, which in itself is a point of diagnostic significance. This patchy condition may exist in the pharynx, extending in streaks along the postero-lateral walls, with a sense of uneasiness or pain on swallowing. The pain darts into one or both ears, and "seems to come out of the ear—to be a very long pain, in fact, apparently extending beyond the surface of the body." The pain of gouty sore throat appears severe out of all proportion to the degree of inflammation. Periodicity may prove, on investigation, to constitute a symptom of lithiatic manifestations in the upper air-passages. Lithic storms have been accompanied by marked naso-pharyngeal catarrh not present in appreciable degree during the intervals, the symptom appearing several days before the digestive and other disturbances. General medication and hygiene serve to check the catarrh and the general attack. In such a case, iodine and stimulant applications are extremely irritant. Obstinate relaxation of the venous plexus of the turbinated bodies, coincident with general lithæmic in-

disposition, cannot be treated to advantage with caustics, on account of too great inflammatory reaction. Soothing local applications, diluents and alkalies internally, and hygienic measures are the most effective means of relief. Damp, cold winds invariably bring about, in certain lithæmics, inflammation and occlusion of the nasal chambers to an extent not severe but very annoying. Local measures avail but little, while *general treatment* is followed by good results.

REFERENCE.—"New York Med. Jour.," Feb. 15, 1890.

GRANULAR LIDS.

Synopsis.—(Vol. 1890, p. 280.) In old chronic cases with pannus, apply 5% solution of **Cocaine**, and brush the everted lids with **Corrosive Sublimate** solution, 1 in 100, twice weekly, and a solution, 1 in 500, to be dropped in the eye three times a day; or evert the lid, apply cocaine and squeeze out the large soft granulations, removing clot and débris, and then dusting with ℞ Tannic Acid 1 part, Boric Acid 3 parts, M.; both to be in very fine powder. This is applied once or twice a day for from one to four weeks.

GRAVE'S DISEASE. (See "Goître, Exophthalmic.")

GUNSHOT WOUND. *W. J. Penny, F.R.C.S.*

Detection of Bullet by means of the Telephone.—Dr. George R. Fowler reports the following case: A boy, of five, accidentally received a pistol shot wound in the face. The bullet entered near the left infra-orbital foramen; the probe could be passed in directly backwards for about one inch, and then came against a hard substance, but whether this was the bullet or bone could not be decided. Recourse was then had to the telephone, in accordance with the suggestion of Dr. Girdner, of New York. Dr. Fowler describes the mode of procedure as follows: "An ordinary metallic sound-gauge was attached to about two feet of ordinary insulated copper wire, and the other extremity of this latter was attached to one of the binding posts of a telephone (receiver); from the other binding post of this instrument a similar piece of wire passed to the eye of a silver pocket-case probe. The sound-gauge was held firmly pressed against the surface of the cheek of the child, and with the telephone applied to my own ear I passed the probe again down through the wound, and heard the characteristic rasping, clicking sound in the telephone which announced the contact of the probe with some metallic substance in the tissues." Subsequently the bullet was extracted from the spheno-maxillary fossa without difficulty.

REFERENCE.—"New York Med. Jour.," Aug. 24, 1889.

HÆMATHIDROSIS.

Synopsis.—(Vol. 1889, p. 268.)—**Ergot** (Bulkeley); **Abstraction of Blood** (Anderson); **Belladonna.**

HÆMATURIA. *E. Hurry Fenwick, F.R.C.S.*

An interesting discussion has been raised upon the causation of hæmaturia by the ingestion of rhubarb. It is contended that in some individuals oxaluria is prone to follow on indulgence in rhubarb and certain fruits, and that the passage of the sharp crystals of the lime oxalate through the secreting or conducting urinary passage induces a transient traumatic hæmaturia.

Mr. Reginald Harrison, in a clinical lecture on hæmaturia, mentions a case of profuse hæmorrhage after excessive indulgence in asparagus. *A propos* of bleeding in prostate enlargement he makes the following remarks: "In the majority of instances the amount of bleeding is not large, but it recurs from time to time on very slight causes, such as cold and fatigue. There are a good many persons with large prostates who get temporary attacks of bleeding much on the same principle as others do who suffer from piles. When the bladder is capable of emptying itself tolerably well this symptom is merely a temporary one, and usually disappears with some restrictions in diet and a little active purgation. There is, however, one condition of the senile bladder which adds considerably to the trouble connected with this kind of bleeding. I refer to those instances where it occurs with a large prostate and an atonic, or almost completely atonic, bladder. The great safeguard against prostatic hæmorrhage is the power of the bladder to exercise pressure. In two instances not only had I to empty the bladder of blood, but to keep it empty by pressure upon it, and the retention of a catheter until the tendency to bleed had ceased, just as is done with the flaccid uterus. In both the instances I refer to this was successfully accomplished, and the patients recovered, though the loss of blood was considerable. It is not the least use depending upon hæmostatics in cases such as these. The mechanical reason why the bleeding will not cease must be recognized and acted upon, or the patients will flood to death with their bladders distended with blood up to the umbilicus, as I have seen."

REFERENCES.—"Lancet," June 28, p. 1457, 1890; Ibid., July 5, 1890; Alex., Fouleaton, "Lancet," p. 709, pt. ii. 1890; R. Harrison, "Med. Press and Circ.," p. 651, June 26, 1890.

Synopsis.—(Vol. 1889. p. 26.) **Ext. Bursæ Pastoris Liq.**, ♏x to xx.

HÆMOPTYSIS. *F. de Havilland Hall, M.D.*

In the absence of heart disease, aneurysm and malignant disease of the lungs, is every case of pulmonary hæmorrhage to be ascribed to tubercular disease of the lung? A few years ago, influenced by the teaching of Dr. Walshe, an affirmative answer to this question would

promptly have been given. To-day, however, it is recognized that other sources of hæmorrhage may exist, and Sir Andrew Clark has done good service by directing attention, in his own forcible manner, to the non-tubercular and non-cardiac hæmoptysis of elderly persons. In studying the life history of the case which first led him to recognize the nature of the disease it was seen that the patient had been for many years an arthritic, that he had frequently suffered from many of the constitutional manifestations of this diathesis, and that the structural changes in the pulmonary blood vessels were akin in character to those which are found in the diseased articulations. Hence Sir Andrew concluded that the malady was of an arthritic nature, and that the case might be called without serious scientific impropriety one of "arthritic hæmoptysis."

As the result of his enquiries, Sir Andrew has drawn up the following statement of propositions: (1,) There occurs in elderly persons, free from ordinary diseases of the heart and lungs, a form of hæmoptysis, arising out of minute structural alterations in the terminal blood vessels of the lung; (2,) That these vascular alterations occur in persons of the arthritic diathesis, resemble the vascular alterations found in osteo-arthritic articulations, and are themselves of an arthritic nature; (3,) That although sometimes leading to a fatal issue, this variety of hæmoptysis usually subsides without the supervention of any coarse anatomical lesion of either the heart or the lungs; (4,) That when present this variety of hæmorrhage is aggravated or maintained by the frequent administration of large doses of strong astringents, and by an unrestricted indulgence in liquids to allay the thirst which the astringents create; (5,) That the treatment which appears at present to be the most successful in this variety of hæmoptysis consists in diet and quiet, in the restricted use of liquids, and the stilling of cough; in the administration of **Calomel** and **Salines**, in the use of **Alkalies**, with **Iodide of Potassium**, and in frequently renewed counter-irritation.

In the discussion which followed the reading of this paper, the subject of the treatment generally of hæmoptysis cropped up. Dr. Quain strongly condemned the application of **Ice** to the chest in cases of hæmoptysis, saying that it did no good, but rather harm, by inducing bronchitis. Dr. Thorowgood pointed out that it is the *prolonged* application of ice which is injurious. The *sudden shock* of the ice at first contracts the vessels and may do good, but its continuous application does not maintain this contraction and is very likely to cause congestion and bronchitis. It follows from this that it is the *intermittent*, and not too *prolonged* application of cold which should be followed in the treatment of hæmorrhage.

REFERENCES.—"Lancet," vol. ii., p. 840, 1889, ; Ibid., p. 927.

Synopsis.—(Vol. 1889.) **Geranium Maculatum**, grs. x. to xl. (p. 42) ; **Lamium Album.** R Tinct. Flor. Lamii Alb. (about) ℥iv; Syr. Sacchari ℥ij ; Aq. dest. ℥ix, M. Half a teaspoonful half-hourly until the bleeding ceases, then a tablespoonful every four hours until all symptoms disappear (p. 51).

HÆMORRHOIDS. *Herbert W. Allingham, F.R.C.S*

During the past year, as during its predecessor, not very much of note has been added to the treatment of piles.

Dr. Kosobudski, writing in the "Russkaya Meditsina," discussed a modification of Unna's plan of treating hæmorrhoids with **Chrysarobin**, which he had himself satisfactorily employed in twenty-two cases. After washing the pile with a weak carbolic or creolin lotion and drying it with cotton wool, he applied three or four times a day an ointment composed of chrysarobin 8 parts, iodoform 3 parts, ext. belladonna 6 parts, and vaseline 150 parts. Internal piles were treated by means of suppositories composed of chrysarobin 1 grain, iodoform ¼ grain, ext. belladonna ⅛ grain, cacao butter 30 grains, and glycerine *quant. suff.* Much hæmorrhage required a **Tannin Suppository.** Three or four days of this treatment caused the pain and hæmorrhage to disappear, and in three months or so the piles were found to be almost entirely shrivelled up.

Previous reference has been made to Mr. Swinford Edwards' successful treatment of thirty-eight selected cases of piles by an injection of **Carbolic Acid.** Dr. Andrews, of Chicago, who has long studied this method, has found from statistical researches that out of three thousand cases of injection of carbolic acid into piles, thirteen deaths ensued. He attributes this mortality to the little care taken as to the purity of the acid employed.

Piles have been treated by the ligature, by the clamp and cautery, and by various modes of excision. Most of these are too well known to require any description. Crushing has continued to be an excellent operation when the piles are not too large and not too numerous. The hæmorrhoid should be drawn into the screw-crusher (see last year's "Ann.") by means of a vulsellum, and the bar be pushed up and screwed home as tightly as possible. The crushing of the pile should be performed longitudinally and not transversely. After this the projecting portion of the pile should be cut off. The above is the least painful of all modes of removing internal piles.

There is no need to repeat the sketch of the modification of the use of the ligature combined with incision, practised by Dr. Joseph Matthews, of Louisville, U.S.

A long paper on the treatment of piles was read before the New

York State Medical Association, by Dr. H. O. Marcy, of Boston, who described his method of *excision and closure by the buried animal suture.*

Along the line of the junction of the mucous membrane with the skin a division, either with the knife or with scissors, was made from a central line posteriorly, from below upwards on both sides to the median line above. The plexus of the vessels need not be injured by the division. The loose connective-tissue fascia was usually separated by a finger or blunt instrument. The mucous membrane above the plexus should then be divided transversely in a similar manner, and the deformed hæmorrhoidal plexus be separated from its surroundings, except at its base. The needle, with eye at point, threaded with tendon, was carried posteriorly behind the mass, unthreaded, and then rethreaded with the opposite end and withdrawn; the stitch resembled the one the shoemaker takes when he draws the waxed end of his thread in opposite directions through the hole made by the awl. In this manner the entire base of the plexus was encircled by a line of deep, double, continuous sutures.

Dr. Marcy had for years used this stitch for the coaptation of deep parts by the buried suture, *e.g.*, in rupture of the perinæum, and thus no tissue could possibly escape. The stitches should not be too tight, for their purpose was to control hæmorrhage, and not to cause necrosis of the enclosed parts. Next, the hæmorrhoidal plexus, just above the line of sutures, was to be dissected away with scissors; then the mucous membrane should be stitched by continuous suture to the line of division, either with an over-and-over stitch, or with a running blind stitch, taken from side to side from within outward.

REFERENCES.—Kosobudski, "Lancet," Oct. 19, 1889; Andrews, "New York Medical Jour.," Sept. 28, 1889; Marcy, "New York Medical Jour.," Oct. 26, 1889; Allingham, "Diseases of the Rectum," fifth edition, 1888.

HAY-FEVER, HAY-ASTHMA, PAROXYSMAL SNEEZING.

P. Watson Williams, M.B.

What is the Pathology of Hay-Fever?—Very many able articles have recently added largely to our knowledge of this disease, but there is still much confusion as to the relative importance of local and general conditions as etiological factors. Clinically we may arrange patients in three classes: (*a*) Those in which the lesion is *peripheral* entirely, such as the earlier and milder forms of true hay-fever, in whom symptoms only occur when the patient is exposed to pollen. This class is very amenable to local treatment; (*b*) Those in which the symptoms, in the first place induced by

peripheral irritation, have become more or less persistent, even in the absence of any pollen or specially irritating particle. These cases can only be treated by removing the peripheral irritation by local treatment *and* treating the hypertonic nerve centres as well ; (*c*,) Idiopathic cases, not due to peripheral irritation. For these local remedies are absolutely useless, and general treatment alone can avail to cure or relieve.

It is with the first two of these divisions we have to do. In almost every case there is manifestly great general prostration, seemingly out of all proportion to the peripheral irritation causing it. It is very important that everything should be done to maintain the general health and strength of the patient. As regards local remedies sedatives and anæsthetics must be used with caution. **Morphia, Cocaine, Menthol, Stramonium,** if used for any length of time, lose their efficacy, and leave the patient in a worse condition than before.

The best results have been obtained by destruction of the irritable spots in the nasal mucous membrane by the **Galvanic Cautery** (vide "Med. Ann.," p. 281, 1890), or by the application of some substance which exhausts the irritability of the membrane, such as **Glycerine of Carbolic Acid** advocated by Sir Andrew Clarke ("Med. Ann.," p. 286, 1888). We have had pleasing results in some cases in which we used a solution of **Iodic Hydrarg.** (1 in 1000) as a nasal spray. In our own case the symptoms had commenced as usual, for the seventh year in succession, cocaine, menthol, quinine, Ferrier's snuff, Himrod's powder, perchloride of mercury, and many other remedies, local and general, had been previously tried, and failed to give any lasting relief. The **Iodic Hydrarg. Spray** was used freely. It caused considerable pain, and was intensely irritating, the nares being blocked by the swollen mucous membrane for some hours. Since this single application not the slightest symptom of hay-fever has been experienced, even in freshly mown hay-fields. Dr. Rixa has found the following prescription "act charmingly at a paroxysm" of hay asthma :—

℞ Fl. Ext. Quebracho fl ℥j | Fl. Ext. Yerba Santa
Fl. Ext. Grindelia Robusta | Fl. Ext. Myrtuschekan āā fl ℥ij

Sig. ℥j every fifteen minutes in hot water and brandy.

He also reports most favourable results from **Peroxide** inhalations. Dr. Scanes Spicer has devised hollow **Medicated Nasal Cylinders** which, as local sedative remedies, have three advantages : (*a*,) They permit free nasal respiration during use ; (*b*,) They cannot slip back into the pharynx during sleep ; (*c*,) They cause the affected tract to be soothed and bathed by the medicament for many successive hours.

Synopsis.—(Vol. 1889, p. 272.) Instillation and bathing conjunctiva with **Cor-**

rosive Sublimate, 1 to 3000, fourteen days before the regular period of return, or Boracic Acid solution, used similarly, and if some irritation still remain, dabbing of margins of lids and inner canthus with Cocaine, 1%. Cocaine Tabloids gently inserted into nose; pungent inhalations of strong Ammonia, Carbolic Acid, Camphor, or Iodine, the last being most effectual, using Linimentum Iodi, which is sniffed when attacks come on. Some prefer Terebene, Pinol, or Eucalyptus. Creasote, ɱj in a pint of water, inhaling the steam; Camphor, saturated solution in Alcohol, ɱij to iij, taken on sugar every ten minutes, until attack ceases; Nitre Papers, made by soaking six thicknesses of blotting paper in saturated solution of Nitrate and Chlorate of Potash, and sprinkled when dry with Essence of Camphor, Tinct. Benzoini Co., Tinct. Sumbul or Stramonium, and then burnt. Himrod's Powder, Strong Black Coffee, taken at onset; Effervescing Citrate of Caffeine. Quinine as douche or spray in hay fever —useless in paroxysmal sneezing; Hazeline, ɱxx t.i.d., or sniffed up nostrils, useful in hay fever and sneezing; Iodides alone, or with Syr. Pruni Virginiæ; Iodine Tinct., ɱxx to xxx to a pint of boiling water, and inhaled for itching of nose or inner canthus, sneezing, running at nose and eyes of clear watery fluid, and severe frontal headache; Arsenic in paroxysmal sneezing, occurring in morning and often during the day, running at eyes and nose, frontal headache and itching at orifice of nostrils, or when food excites an attack, or when in children breathing is difficult after acute bronchitis. Linimentum Aconiti or Ung. Aconitiæ applied to itching or irritating spots; Bidens Bipinnata Decoction for hay asthma (p. 24).

(Vol. 1890, p. 281.) Electric Cauterization of mucous membranes; Antipyrin, 4%, as spray instead of cocaine.

HEADACHE. *Graeme M. Hammond, M.D., New York.*

Dr. Morris, J. Lewis and Dr. G. E. de Schweinitz report several cases of headache benefited by the **Oil of Eucalyptus,** in doses of 5 minims, given from four to six times daily. In one case 20 minims were given, thereby preventing the attack of headache of which premonitory symptoms were felt. The drug is most effective in malarial and in congestive headaches.

Headaches which the ophthalmologist meets with, says Dr. W. H. Wilmer, fall under two classes: one, traceable to the use of the eyes, and is accompanied by a weak feeling of the eyes, watering, strained sensation, and inability to use them for any length of time. In the other class the vision is apparently perfect, and the eyes are free from pain; but when a thorough examination is made, the eye being under the influence of a mydriatic, serious ocular defects are discovered. The fact that headache disappears under the influence of a mydriatic gives ground for prognosticating relief by glasses. Flat smoked glasses should be worn, if a coloured glass is necessary.

References.—"Therap. Gazette," Sept. 15, 1889; "New York Med. Jour.," Aug. 30, 1890.

Synopsis.—(Vol. 1889, p. 274.) Salicylate of Soda, gr. xx, with Effervescing Citrate of Caffeine, grs. ij, every two hours, if necessary, in migraine;

Cysticine, gr. $\frac{1}{20}$ to $\frac{1}{12}$, hypodermically; Nitro-muriatic Acid Dil., gtt. xl to lx, taken in two doses within the hour; or a glass of very strong Lemonade, in Migraine, with large excretion of Uric Acid. Menthol, grs. v to xv, in wineglassful of hot water, for migraine and also headaches and supra-orbital neuralgias of anæmia and neurasthenia; it may be usefully combined with Antifebrin or Antipyrin and Saffrol. Oertel's method for treatment of circulatory disorders is useful in intense chronic headaches in the obese with fatty heart; Nitro-Glycerine, ♏j to ij of 1% solution, when pain is paroxysmal and face pallid; Antipyrin; Fresh Liq. Ext. of Indian Hemp.

(Vol. 1890, p. 282.) Caffein and Salicylates in migraine; Oil of Eucalyptus, ♏v, four times a day for paroxysmal headache; Cascara Sagrada in teaspoonful doses to ward off migraine. ℞ Sp. Ammon. Aromat. ℥ss, Sp. Chloroformi ♏x, Aq. ad ℥j, in toxic headaches from alcohol and tobacco; also Antipyrin in 3 grain doses. In more chronic cases, Digitalis in small doses; Nitrite of Amyl greatly diluted, or better, Nitro-Glycerine in acute and recurrent headaches, also in the headache of anæmic girls. In the recurrent forms give alkalies, and if patient be anæmic, Iron with an alkaline carbonate. ℞ Sodii Bicarb. gr. x, Ferr. et Ammon. Citrat. gr. v, Sp. Chloroformi ♏x, Aq. Menth. Viridis ad ℥j, M.; Fiat. haust. ter die ante cibos semihoro sumendus. In persons of the uric acid diathesis a mixture containing Citrate of Potassium, 20 grs., and Salicylate of Sodium, 10 grs., is useful for correction of astigmatism.

HEART (Hypertrophy and Dilatation of).

Jas. R. Leaming, M.D.,
Frank Jackson, M.D., } *New York.*

Fraentzel has published a most important and exhaustive study of the idiopathic enlargements of the heart. The classification of these disorders is made according to their etiology. They may be divided into three groups with numerous sub-groups :—

(1,) Those in which abnormal resistance in the arterial system, usually the aortic system, more rarely that of the pulmonary artery, gives rise to enlargement of the heart and its sequelæ : (*a*,) Excessive resistance in the pulmonary arterial system; (*b*,) Enlargement as the result of renal disease; (*c*,) Enlargement resulting from excessive consumption of food and drink; (*d*,) From overwork—(*c*) and (*d*) formerly called arterio-sclerosis; (*e*,) From heart strain (acute dilatation of the heart); (*f*,) From congenital narrowing of the aortic system; (*g*), From the hardships of war; (*h*,) From excessive congenital size of the aorta.

(2,) Those in which the resistance in the aortic system is normal, but the heart muscle is diseased primarily, and hence its function is impaired; (*a*,) Fatty heart; (*b*,) Dilatation of the heart in diphtheria etc.; (*c*,) Weakened heart; (*d*,) Sclerosis of the coronary arteries.

(3,) Those in which the resistance in the arterial system and the heart muscle is normal, but the nervous system of the heart is first affected; (*a*,) Basedow's disease; (*b*,) Tobacco heart, etc.

Fraentzel considers it essential in each case of enlargement of the

heart to decide whether there is hypertrophy of the ventricular wall or a dilatation of the corresponding cavities. Both conditions are very often found present at the same time, but it must be remembered that they are of very different significance to the patient. Hypertrophy is a favourable condition for the patient and enables him to overcome abnormal resistances in the circulation. The opposite holds good of dilatation. If the obstruction to be overcome by the ventricle is too great, or the latter is too weak or is diseased, the cavity will be dilated because it cannot propel the entire amount of blood which fills it. The smaller the active power of the ventricle the greater will be the dilatation.

We must abandon such expressions as concentric, eccentric, etc. hypertrophy, and must distinguish clearly between hypertrophy of the ventricular wall and dilatation of the cardiac cavities. The former furnishes a guarantee of life, the latter constitutes the fatal danger for the patient.

The hypertrophy of the muscle and the dilatation of the ventricular wall will develop in the most varied diseases of the heart, whether dependent on valvular lesions or not. The slower the increase of the resistance which must be overcome, the greater is the probability that the ventricle will retain the power of overcoming the resistance, without dilatation of the cardiac cavities. As a matter of course, the conditions of general nutrition and thus the functional activity of the entire muscular system have a material influence on the working power of the ventricle.

Fraentzel calls attention to the fact that though it is so essential to distinguish between dilatation and hypertrophy, he makes use of the general expression, "enlargement of the heart," for the reason that, although the condition of dilatation gives rise to the morbid symptoms, yet, in the individual case it is very difficult to exclude the coincident existence of hypertrophy of the muscular tissue. The latter is not excluded by the term, enlargement of the heart, while the chief stress is laid on the dilatation.

He considers the diagnosis of hypertrophy of the heart to be very difficult. When the few characteristic symptoms are wanting it cannot be made in many cases, although hypertrophy is really present. We often infer the presence of hypertrophy when (the proper conditions for such hypertrophy being present) we hear for months an intensified second sound. Fraentzel believes that percussion of the heart permits no conclusion with regard to hypertrophy. When the thickness of the wall of the ventricle increases to half a centimèter we have to deal with a very pronounced hypertrophy, while the enlarge-

ment of the area of cardiac dulness by this amount is demonstrable with difficulty or not at all. The method of percussion is not fine enough for such delicate measurements. As soon as the cardiac dulness is increased to a notable extent to the right or left it is owing to dilatation of the ventricle.

The reporter would here call attention to the value of *auscultatory percussion* in the diagnosis of slight enlargements of the heart. This method of percussion *is* fine enough to detect very slight changes in the size of the left ventricle, in all cases, and of the right heart in a majority of cases. It is a method whose value is not sufficiently recognized. Fraentzel believes, therefore, that cardiac dulness possesses only a relative value in the diagnosis of heart disease. If the boundaries of normal dulness are overstepped and there is no disease of the adjacent organs the heart is certainly dilated, but if the dulness remains within normal limits it does not follow that the heart is not increased in size, since by (the ordinary methods of) percussion such enlargement cannot be recognized through over-lying lung. The more arched the thorax the less need of cardiac dulness to warrant the assumption of dilatation of the heart.

Hypertrophy and dilatation of the right ventricle, and their sequelæ may result from a large series of diseases, such as chronic catarrhs with increased volume of the lungs, emphysema with or without adhesions of the layers of the pleura, chronic indurations of the pulmonary tissue, following unfavourable pneumonia, with coincident bronchiectasis, etc., ; compression of the lung by chronic pleuritic exudations ; and (comparatively rarely) chronic pulmonary phthisis.

As a rule the pulmonary disease proves fatal before the gradually increasing dilatation of the right ventricle produces special symptoms. As long as the hypertrophy exists alone the heart naturally will cause hardly any disturbance to the patient. If the patient lives, these symptoms on the part of the circulatory apparatus will be noticed. This is seen most frequently in patients in whom, as the result of impeded development of the bony thorax, the lungs remain small in comparison to the general organism. In many of these cases a fatal termination occurs at an early age, but suitable dietetic regimen, carefully regulated exercise, and proper rest of the body, will often save these patients for years. Oertel's method is recommended, but the importance also of bodily rest and cardiac nervines is emphasized. Fraentzel concedes the truth of Trauhe's statement that an abnormally high tension develops in the aortic system in contracted kidneys in chronic diffuse nephritis, occasionally in waxy degeneration of the kidneys, and also in a considerable number of cases of pyelonephritis.

This high tension gives rise to simple hypertrophy of the left ventricle, generally to dilatation and hypertrophy, rarely to simple dilatation of the left cavities. The longer the patient survives these affections the more often do secondary enlargements develop in the right heart, because increase of pressure in the left ventricle is transmitted gradually to the lesser circulation and to the right ventricle. There is no doubt of this abnormally high pressure in the aortic system, or of the fact that the increase of pressure precedes the hypertrophy of the left ventricle. As to the explanation thereof, the problem is not so simple. Fraentzel deems it most plausible to assume that certain ptomaines are formed as the result of the renal affection and are retained in the blood. We are unacquainted with their real nature, but we know that they give rise to inward pressure of the aortic system, and secondarily to disease of the heart. These enlargements of the heart are important. The cerebral hæmorrhages which occur in the course of Bright's disease must be attributed partly, at least indirectly, to hypertrophy of the left ventricle. But, above all else, conditions of more or less heart weakness are found, especially of weakness of the left ventricle. There may be *pulmonary œdema* if the right ventricle acts with normal power while the function of the left ventricle is impaired. In such cases the patient can often be relieved if seen early enough. On the one hand the left ventricle must be stimulated, on the other hand we must endeavour to check the exudation from the blood-vessels of the lesser circulation, and remove the exudation already present. The former is affected by cardiac nervines; **Wine, Valerian, Camphor, Castoreum,** and **Musk** are to be recommended. The exudation into the air-passages is best restricted by the application of large blisters to the anterior chest wall, applied long enough to produce erythema only. With this, active laxatives may be employed, preferably compound infusion of senna. In desperate cases we must resort to hypodermic injections of **Morphine.** The dose should not be less than a ¼ of a grain, unless there be special contra-indications. In addition we give from the start large doses of **Lead Acetate,** 1 grain every hour or two. In such cases this latter remedy prevents with the greatest certainty the occurrence of pulmonary œdema.

Another form of idiopathic enlargement of the heart has been called, until very recently, heart disease following *arterio-sclerosis.* The number of these cases is extremely large. Fraentzel prefers to call them enlargement of the heart resulting from the excessive ingestion of food and alcohol or from excessive work, for the following reasons: Arterio-sclerosis, or endarteritis deformans, is frequently found to be

associated with enlargement of the heart, but enlargement of the heart has been found without arterio-sclerosis being present, and extreme arterio-sclerosis has been found without enlargement of the heart. A common cause capable of producing, on the one hand, enlargement of the left ventricle, and, on the other, arterio-sclerosis is abnormal high tension of the aortic system. Such increase of tension in the aortic system may be produced by excessive indulgence in the pleasures of the table or from excessive bodily strain. In the well-to-do classes it is excessive consumption of food and drink ; in the labouring classes it is the excessive work continued for many years. Males are most commonly attacked. The symptomatology is so characteristic that the diagnosis is comparatively easy. In the well-to-do the patients are usually large and vigorous men who gradually grow stout, and after forty have attained, generally, an immense deposit of fat. They begin to grow short of breath, and this, gradually increasing, begins to create difficulty. The radial pulse is sometimes more tense than normal, the arteries, perhaps, slightly sinuous, though neither change is more marked than we often observe in patients approaching fifty years of age. The heart sounds are clear, and enlargement of the heart cannot be ascertained by percussion. If the patient now abandon his previous habits the condition is checked or may even disappear to a certain extent, and he may live many years. Usually the patient does not do this, and then the dyspnœa increases, palpitation of the heart supervenes, there is loss of appetite, sleep and strength, the pulse becomes irregular, the tension of the arteries greater and dropsy appears. The heart sounds remain clear, but the area of cardiac dulness is now increased.

The main cause of this condition is the abnormally high tension in the arteries of the abdominal organs. The excessive ingestion of food or heavy beers, associated with little exercise, finally leads to venous hyperæmia in the intestinal canal, and secondarily to stasis in the capillary and arterial system of the intestines. Hence results abnormally high tension in the aortic system, which is increased by the use of alcohol, coffee, and tobacco.

Enlargement from overwork is found not infrequently in unusually vigorous men who constantly do arduous labour, as blacksmiths, etc. Such men gradually lose their power to work in the latter half of the thirties, or more frequently after forty. The symptoms are a feeling of pressure on the sternum if they continue to work or climb a hill, and any like exertion ; then dyspnœa, bronchial catarrh, and perhaps a slight dropsy. The heart is found to be enlarged, and there is hypertrophy and dilatation of the left ventricle or of both ventricles. These

symptoms must be interpreted as the result of stasis. If the patient stop work his condition improves, if he return to his work he is soon incapacitated again. After a longer or shorter duration of such intervals death supervenes after constantly increasing symptoms. This enlargement of the heart develops more often when the individual drinks heavily and smokes excessively. If the patient, after the first signs of heart disease become noticeable, can restrict himself to a sufficient extent in the use of alcohol and tobacco, he may often remain equal to his heavy work for a long time. Every excessive muscular effort increases the aortic pressure and at the same time creates abnormal resistances in the respiratory apparatus, and thus in the system of the pulmonary artery. In this way alone can we explain the development of hypertrophy and dilatation of both sides of the heart after excessive work continued for years.

The *treatment* of enlargement of the heart due to over-eating and drinking is, first, *prophylatic*. Those who are disposed to take on fat excessively, and those who are compelled by their calling to adopt sedentary habits, should be directed as early as possible to perform methodical bodily exercise, and their diet should be properly regulated.

Second, the treatment as soon as the existence of hypertrophy of the left ventricle with abnormal tension is determined. Here the main indication is the diminution of the excessive resistance in the arteries, and the consequent increase in the activity of the heart; venesection occasionally, or issues in the region of the heart, or in the left arm. Or the mass of blood may be diminished by purgatives. Diuretics may also be employed. Thirdly, the treatment of the asthmatic attacks. We have now reached the stage of failing energy of the left ventricle, and we must, therefore, resort to cardiac stimulants. In this stage the true treatment is a combination of injections of **Morphine** with the long-continued use of **Digitalis** and not too strong cathartics.

Another form of enlargement of the heart is from a single momentary strain of the heart, giving rise to dilatation of the left ventricle. These cases Fraentzel calls "*Acute Heart Strain*," as opposed to "chronic" ones, in which a strain lasting a certain length of time, for example, several days or weeks, gives rise to dilatation of one or both ventricular cavities, with the further symptom of insufficient action of the heart muscle. Both these cases are commonly known as acute dilatation of the heart. The symptoms are such as would be naturally expected from failure of the heart muscle. The prognosis is very grave, and the treatment is by cardiac tonics, preferably **Tr. Valerian** and **Tr. Castoreum**.

Fatty Heart, as it is generally described, he does not consider as such, but he recognizes a variety of fatty heart which he calls acute idiopathic fatty heart, and which is not an independent disease but merely a sequel of other morbid processes, although the anatomical findings, the severe general fatty metamorphosis in the heart muscle have been recognized equally with the peculiar clinical symptoms. Many cases of dilatation of the heart with great irregularity of the pulse have been observed when only slight fatty degeneration, or none at all, has been found at autopsy, while pronounced fatty degeneration of the muscle may run its course without any symptoms on the part of the heart; in other words, the degree of fatty degeneration is not proportionate to the severity of the symptoms. Our knowledge of a series of affections which are generally grouped under the term "fatty heart," is only that an abnormal dilatability, lack of resistance, and weakness of the heart muscle develops under certain conditions, and is characterized macroscopically, whether dilatation of the cavity has occurred or not, by a certain brittleness of the muscular tissue. The abnormal dilatability of the heart muscle has been known longest in acute rheumatism, which, according to Fraentzel is settled to be an infectious disease, although its special microbe is not yet discovered. It is, therefore, easy to suppose that the microbes of rheumatism, either by a special ubiquity or malignancy, invade the muscular tissues of the heart and then give rise to molecular changes which make it more distensible by inflammation or less competent to resist the pressure of the blood.

In a like manner the dilatation of the heart found in diphtheria and other infectious diseases may be ascribed to the action of the specific microbe.

Fraentzel does not believe that the heart is enlarged during pregnancy—the enlargement is only apparent.

Under the group of nervous influences causing enlargement of the heart, he believes that exophthalmic goitre, abuse of tobacco and alcohol, paroxysmal tachycardia, and palpitation following great mental excitement, should be placed.

Dr. Schott, of Nauheim, in speaking of acute over-strain of the heart, says that cases have been reported by Leyden and Fraentzel and himself, which, from a pathological standpoint, places the existence of this condition beyond a doubt. Experimentally he has produced the same condition in healthy and vigorous men by making them struggle until dyspnœa came on. In one series of experiments he compressed the body of the struggling person by a girdle applied below the arch of the ribs, thus increasing

the intra-cardiac blood-pressure, and rendering the action of the heart extraordinarily difficult. In all these cases he succeeded in producing the symptoms characteristic of acute overstrain of the heart. Both sides of the heart were dilated, sometimes to considerable dimensions; the intra-cardiac blood-pressure was augmented, there were dyspnœa, arhythmia of the pulse, and tachycardia. He also mentions a number of cases in which symptoms of acute overstrain of the heart were produced by lifting heavy weights, climbing mountains, velocipede riding, dancing, and, particularly, tight lacing. In healthy individuals all the symptoms disappeared without leaving any trace; but when the heart was functionally affected, either owing to defect of innervation, valvular disease, or degeneration of the cardiac muscle, the disturbance might last for a long time, and increase to a most dangerous degree, even to death. Treatment consists in absolute rest and nourishing food.

Tachycardia, or *Simple Rapid Heart.*—Balfour regards this as the commonest phenomenon associated with the senile heart, and states that it varies in its nature, quality, and cause. Tachycardia is a term originally applied to cases of a *paroxysmally* rapid (120 to 200) but regular pulse of neurotic origin, but such typical cases shade off in every direction. Tachycardia is a rapid heart beat, more continuous than mere palpitation, and less forcible; it may last for days, weeks, or many months—even for years; the heart beat is feeble, at times conveying an impression of irregularity; the pulse is rapid, but regular; and the blood tension low. The heart seems to be set free from the inhibition of the vagus and to be run off by the accelerators, the augmentors taking no part. In this, tachycardia differs from its most closely allied congener, Graves' disease, in which *forcible* pulsation of the heart and of the vessels of the neck is an early, and sometimes, an only symptom. For, in Graves' disease, we may have violent purtative palpitation without either exophthalmos or goitre, sometimes the exophthalmos alone, and sometimes the goitre alone; the symptoms at first in abeyance, being superadded if the disease progresses. But Graves' disease affects the young chiefly and not the old; still, it occurs often at, and even over, middle life, and the palpitation is so distinctly neurotic in character, that any notice of tachycardia would be incomplete without some notice of an affection so closely allied.

There are cases, also, in which from childhood upward the heart beats persistently at about 150 per minute without apparent detriment to health, the heart rate falling off as age advances. In connection with the senile heart, and apart from all other possible causes, the author has seen many cases of tachycardia, pure and simple, lasting

for months or years ; some in whom recovery took place, and who, after recovery—sometimes after years—had again a relapse owing to some break down in general health.

Rarely, tachycardia is associated with sub-acute endocarditis, and terminates in mitral stenosis. These cases take their origin in various ways, from overstrain, chorea, or syphilis. The heart is not as a rule dilated, and the tachycardia passes off under treatment, or ceases when stenosis is developed. They all belong to an early period of life, rarely even approaching middle life.

Paroxysmal Tachycardia.—L. Bouveret has published a long article upon idiopathic paroxysmal tachycardia, meaning by the term "idiopathic," that the symptoms are rather due to a functional disorder of the nerves governing the motions of the heart, than to any permanent lesion either of the heart, the cardiac nerves, or the nervous centres. In the interval between the paroxysms the function of the heart is normal. When the attacks are short there is only extreme rapidity of the heart's action (200 or 300 a minute), but if the tachycardia persist for more than four or five days, the pulmonic, and even the systemic circulation, becomes embarassed. The heart is acutely dilated. There are thoracic symptoms, with cough and mucous expectoration, soon tinged with blood. Sometimes, besides sonorous breathing and subcrepitant *râles*, friction sounds and even bronchial breathing are heard. There are cerebral symptoms ascribable to the circulatory disturbances. There is dyspnœa, and the number of respirations may rise to 40 per minute. Sometimes there is restlessness, sometimes insomnia ; some patients have disagreeable dreams, some become delirious. The skin is pale and dry ; when the attack takes a favourable termination perspiration is re-established. The temperature is always normal in a short attack, but in the longer ones it may rise 1° to 3° (C.) above normal. Of eleven cases of prolonged attack, four terminated fatally from cardiac failure. A favourable termination of a prolonged paroxysm often occurs suddenly ; after two or three slight and energetic contractions of the heart the pulse fell from 200 or 250 beats to 60 or 70 a minute. At the time of this change peculiar sensations may be felt, such as of impending death, or as if something had burst in the cardiac region. Generally, weakness persists for some days or weeks, according to the duration of the paroxysm and the intensity of the symptoms to which it gives rise. The duration of the disease is long and indeterminate. The cases which the author has collected have had a duration of from three to fifteen years, and in regard to those who still live there is no indication of complete cure ; it is rather more probable than otherwise that

they will have fresh attacks. While the paroxysms do not leave behind them any permanent lesion, yet each attack weakens the vigour of the heart, and the paroxysms tend to become more frequent, and the general prostration lasts for a longer time after the palpitation has ended. Out of eleven cases the author considers one only as cured. Four patients have died either from syncope or from asystole of the heart; and of seven survivors but one is really well. There was one autopsy. A long attack ended in sudden death, and on autopsy no lesion was found either of the valves, myocardium or nerves of the heart. The author, therefore, regards the disease as affecting that part of the centres of the pneumogastric which regulates the action of the heart. The duration of the disease is always an element of gravity. The longer the paroxysm the worse the prognosis. The longest paroxysm to terminate favourably, in the author's experience, lasted thirteen days, but Bristowe reports a case in which the paroxysm lasted five weeks, and was followed by recovery. As regards the etiology of the disease, it has not yet been observed in children. Over-exertion, both physical and mental, is the most active exciting cause. This over-exertion profoundly disturbs the functions of the nerves and the nervous centres which regulate the cardiac contractions, but only in certain individuals; many are not seriously affected by conditions which produce the disease in others. The treatment is chiefly symptomatic. Anæmia certainly favours the development and the persistence of the neuroses. This must be combated by **Iron, General Tonics**, and suitable hygiene and alimentation. Derangements of the stomach or bowels must be treated. Everything tending to excite the nervous system must be avoided. Tea and coffee are prohibited. Digitalis has proved of only moderate value; caffeine, nitrite of amyl, and nitro-glycerine of no value. The subcutaneous administration of **Morphine** has seemed advantageous to the author in calming the patient and moderating his discomfort, but not in shortening the attacks. In two cases leeches applied over the heart relieved the signs of pulmonary stasis. He believes, in conclusion, that the only efficacious treatment of the paroxysm seems to be in the compression of the pneumogastric in the cervical region. This treatment, however, has been applied but three times, and its value cannot be considered as entirely settled.

Brieger, also, has published an important contribution to our knowledge of suddenly supervening tachycardia. A woman, thirty-three years of age, suffered from her ninth year from violent attacks of palpitation and dyspnœa, occurring at intervals of from six to ten weeks to one to nine days. For a year acute pain had been felt in the

cardiac region during the attacks, which were further characterized by orthopnœa, cyanosis, respiration increased to 48, and heart beats to 230 per minute. The temperature fell to 95·7° F. The lungs showed no abnormal physical signs, and the heart was equally negative except for an occasional faint diastolic murmur over the aorta. Pressure in the right ovarian region, compression of one vagus, and electrisation of the precordial region caused cyanosis and slowing of the pulse. The use of stimulants also produced diminution of the pulse rate. After four days of treatment she was well enough to be discharged from the hospital, but two months later she returned with the same serious symptoms which now persisted, and ended fatally. After five days jaundice came on; four days before death there was rise of temperature with infiltration of the pulmonary bases. During the last hours of life the pulse was 180; respiration, 36. Digitalis and morphine were without effect. *Post-mortem* examination showed fibrous myocarditis of the left heart, dilatation of the left ventricle, parietal thrombosis of the left ventricle and the right atrium; pneumonia of both lower lobes of the lungs, hæmorrhagic infarcts in the lungs and left kidney; thrombosis of the right jugular vein, and red-brown atrophy and fatty infiltration of the liver, with jaundice. This affection appeared to be dependent upon paralysis of the vagus, the sympathetic also being involved. The naked eye and histological investigation of the vagi yielded negative results. Brieger notes that of the thirty cases of paroxysmal tachycardia to be found in the literature of the subject there are only two examined after death.

Permanent Slow Pulse.—Huchard believes that this symptom originates in a majority of cases from a sclerosis of the arteries, and as a result of a true bulbar ischæmia. Often one cannot count more than 28 to 30 beats a minute. Frequently there is accompanying dizziness, epileptic attacks, or attacks of syncope. These patients often become finally afflicted with cardiac disease, or Bright's disease. The indications for treatment are high arterial tension, indicated by the radial pulse and the accentuated second aortic sound. The author prefers **Nitro-glycerin**, of which he prescribes once or twice a day, 3 drops of a 1 per cent. alcoholic solution. This he sometimes administers hypodermically. The **Iodide of Potash** or of **Sodium** may be used.

Balfour discusses this subject very ably in the course of his valuable articles on the symptoms and sequelæ of the senile heart, which are now being published in the "Edinburgh Medical Journal." The converse of tachycardia, he says, is *bradycardia*, abnormal slowness of the pulse. This, in his experience, is a much more common con-

comitant of the senile heart than the typical paroxysmal tachycardia. There are two well-marked varieties of brachycardia, one in which the heart beats at its normal rate, but every second or third pulsation is too feeble to reach the periphery, so we have a pulse beating at half or sometimes at only a third of the rate of the heart. In the second variety, heart and pulse are alike slow, and the rate may be even less than 30 per minute. The author has met one case where it was down to 17. He regards the class of cases of really slow heart as much less infrequent than those of hearts beating at the normal rate, but with abnormally slow pulses. All slow pulses, from whatever cause, are apt to be alarming from the tendency there is in such cases to pseudo-apoplectic and pseudo-epileptic attacks. This is well illustrated by the case of an old lady with a gouty history who was suddenly seized with what appeared to be an epileptic attack. These seizures continued to recur whenever she attempted to make the slightest exertion. The heart was dilated but without any murmur, only an accentuated aortic sound. It was beating at the rate of 60 per minute, but the pulse was only 20 per minute. Appropriate treatment directed to the heart was followed by the most satisfactory results. The old lady, who had been regarded as the victim of serious senile epilepsy, had no more attacks, and she lived for several years without any recurrence of her serious symptoms, dying gradually at last from asthenia. A good many cases of these slow hearts have epileptiform convulsions from which some die. In the fatal cases there is always the doubt that there may be some other cause, but when the attacks cease when the pulse returns to its normal frequency the diagnosis does not seem doubtful. All the slow hearts the author has seen show signs of dilatation, but they have not usually shown any marked indications of weakness. Now-a-days we know that slow hearts are not necessarily fatty, and also that there is neither any one symptom, or group of symptoms, which can be regarded as pathognomonic of fatty heart, so that the old idea of there being a recognisable disease called fatty degeneration of the heart is no longer entertained. Very slow hearts with signs of dilatation, he believes, are invariably senile hearts, and therefore not unlikely to have some patches of fatty degeneration about them in case of death, but the diagnosis between fatty degeneration of the heart and a heart which is simply dilated and weak, is very hard to make. A heart which beats at an abnormally slow rate, does so undoubtedly, not because of any change in the condition of its muscular fibres, but because its movements are retarded by an inhibition coming through the vagus and affecting some part possessing high potentiality, presumably the sinus or auricle. A slow heart does not always give rise

to pseudo-apoplectic or pseudo-epileptic seizures, and it is not inconsistent with prolonged life and a fair amount of health.

Prentiss has published an extensive study of all the cases of slow pulse found recorded in medical journals in the library of the Surgeon General's Office, Washington, D.C. There are ninety-three in number, and to these he adds the report of three cases of his own.

One of these is so remarkable, both as regards the extreme infrequency of the pulse and the comparatively early age at which it appeared, as to demand notice here. The patient was a carpenter, fifty-four years of age, who had no history of previous disease and who was an excessive smoker of tobacco. While working in a malarial locality he began to have "weak spells," and finally, upon lifting heavy weights upon several occasions, he fainted. The author could find no well-defined disease. His pulse was 36 and he was weak and depressed, that was all. No organic disease of the heart could be discovered. The systole was full and strong and the diastole greatly prolonged. For twenty-four days thereafter his pulse was between 22 and 39. Then during fourteen days it gradually increased from 39 to 76, when he was able to move around, and by the end of six weeks he was able to work. During the period of slow pulse he had fainting spells if he got out of bed. Several months after he suffered a relapse, and for a number of months his pulse varied from 15 to 44, and the fainting spells were frequent. He then improved so that he could sit up and go about the house, but could not work. Four months later there was a return of all the old symptoms and the pulse varied from 12 to 36 for forty-four days (or up to the time of this report), attended at first with fainting spells and partial unconsciousness and dyspnœa. Gradually the spells grew less, and at the time of this report he was sitting up down stairs with a pulse which varied from 18 to 32.

The "spells" are described as follows: they come on suddenly without warning, often without apparent cause, sometimes following some exertion; the patient faints, losing consciousness. He describes the sensation as one of utter helplessness as the "spell" attacks him, and he comes to himself when it passes off. The spells last from a few seconds to half an hour. The breathing is gasping and slow, as in dying, and consciousness returns with a long drawn breath. There are no convulsive movements. The face and hands become first pale, then dark purplish. There is no pain. During the time that the pulse was lowest, 12 to 16, the spells were recurring almost constantly, and are described as "terrible."

As regards treatment the drug which appeared to benefit him most

was **Ammonium Bromide**, 15 grains three times a day, and extra doses when paroxysms threatened. Of course his tobacco was stopped. Digitalis made him decidedly worse.

Dr. Prentiss classifies the causes which produce slow pulse as follows: (1,) Disease or injury of the nerve centres, producing irritation of the pneumo-gastric or paralysis of the sympathetic; (2,) Disease or injury of the pneumo-gastric nerve increasing its irritability; (3,) Disease or injury of the sympathetic nerves of the heart, paralyzing them; (4,) Disease of cardiac ganglion, by which the influence of the pneumo-gastric nerve preponderates; (5,) Disease of the heart muscle (degeneration), by which it fails to respond to the normal stimulus; (6,) The action of poisons—as lead or tobacco—either on nerve endings or nerve centres. The poison generated in salt fish (case given). Also the poison of certain febrile diseases, algid pernicious fever. He regards tobacco poisoning as the most probable cause of the slow pulse in the case already cited.

The author, as a result of analysis of the ninety-three cases reported, regards the pathology as very obscure. Nearly one half of all the cases belong to the "functional" division, or those in which no organic changes can be found either in the heart or nerve-centres during life or demonstrated at autopsy. It is possible that "functional slow pulse" will be found to be a disease of the cardiac ganglia. Prognosis is unfavourable and treatment purely symptomatic.

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HEART DISEASE (General Therapeutics of).

Jas. R. Leaming, M.D.,
Frank W. Jackson, M.D., } *New York.*

Our present knowledge of the effects of **Digitalis** and of the nature of those effects together with the indications for its use, is admirably expressed in a recent article by Prof. Wood.

The condition of heart disease which is especially met by digitalis is endo-carditis, and the greatest triumphs are achieved by this drug in those cases in which there is simple dilatation, or weakening of the heart walls. Even when the weakness of the wall is due to fatty or other degeneration, digitalis is often of the greatest service. This drug is especially useful in most cases of disease of the heart, not only by virtue of its strengthening power, but by virtue of the peculiar action which it exerts upon the pneumogastric nerve. The so-called

irritable heart of the soldier is undoubtedly the outcome of pneumogastric depression, and is most effectively met by rest and digitalis.

Hypertrophy of the heart is aggravated rather than relieved by digitalis, but the number of cases of heart disease in which the walls of the heart alone are affected is comparatively few. In the great mass of cases we have valvular lesions causing cardiac muscular lesions, and it is especially in the treatment of cardiac valvular lesions that digitalis is of service.

How does digitalis bring relief? First, by its action on the inhibitory nerve, and to some extent by its action on the heart muscles it quiets the heart. It makes the heart deaf to the impulses coming to it from all portions of the system. Instead of one hundred and twenty to one hundred and thirty beats a minute we have a pulse of sixty or seventy a minute, and during the long pauses the ventricle fills itself with blood. So that in the first place the heart has become quiet, and, secondly, the heart thus becomes filled with blood which may be expelled, and when the contraction comes it is a powerful contraction, in which has been gathered up a force that was previously wasted in many different contractions. More than this, in mitral disease we have an aorta wide open and ready for blood; the opening in the mitral orifice is small and irregular, and is choked up with excrescences, so that when the powerful contraction comes there is an immense increase of friction in the mitral valve with but little increase of friction in the aorta, and the blood chokes itself up, as it were, so that very little blood gets back into the venous system. Thus digitalis increases not only the amount of blood that goes out of the aorta, but also increases the proportionate percentage of blood that goes out as compared to that which goes backward.

Common opinion says that digitalis does harm in aortic disease, but the use of digitalis in disease of the aortic valve is governed by the same laws which govern its use in diseases of the mitral valve. Whenever in disease of the aortic valve *the heart is weak* digitalis is to be used precisely as in disease of the mitral valve. The only reason why the drug is not so commonly used in aortic disease is because excessive hypertrophy is more apt to be associated with this condition.

Very extraordinary permanent results are sometimes seen in heart disease from the use of digitalis, and that, too, without continuing the use of the drug. It would seem, therefore, that the drug does more than simply stimulate the heart, and that it ought to be classed as a cardiac tonic and food rather than a cardiac stimulant. It is easy to see how this is. When the aorta is filled and distended with blood coming from a powerful contraction the circulation in the cardiac walls

is especially affected. In valvular disease there is too little blood in the aorta, and the heart starves itself because failure of circulation is felt more severely in the heart wall, even than in the periphery of the body. The heart, therefore, is overworked and underfed. Wood has no doubt that one cause of heart failure in valvular lesions is underfeeding of the heart wall with blood. The heart is restored to normal action temporarily by the stimulation of digitalis, and, consequently, when the blood current rushes out through the aorta there is a great mass of it to go into the heart vessels to feed its walls. When the heart contracts with a spasm it contracts with such force that it empties out all juices from the muscles, and makes a clear open space for the blood to flow in and to feed the heart. And so the heart ceases from its overwork, has a rest from its excessive labour, and is also fed more liberally than it was before. Digitalis does good in these cases, temporarily by restoring the balance of the circulation, permanently by bringing rest and food to the heart itself.

There is a class of cases of old heart disease in which most wonderful therapeutic results have been obtained by the inordinate use of digitalis. That is, by the administration of massive doses, as ½ drachm doses of the tincture three times a day. Such treatment is only to be adopted as a last resort, and with a full recognition of the risk entailed. It is only to be applied in advanced stages of cardiac diseases in which life is a misery and death to be desired. By its use the worn-out heart may be steadied, stimulated, built up, and brought into that condition in which it is able to utilize the last grain of force. When that is gone the heart stops suddenly, and sudden death is the result. For this we must prepare the patient or the friends, so that they may know what to expect.

The value of digitalis as a diuretic, finally, is not that of a direct stimulant to the urinary or secretive organs. When we have failure of urinary secretion it is because there is failure of circulation in the kidneys. Under these circumstances, by regulating the blood circulation the digitalis will increase the urinary secretion. The great value it has in cardiac dropsy is by restoring everywhere the balance of the circulation.

It was the unanimous sentiment of the members of the International Congress of Therapeutics, Paris, that digitalis still holds the foremost place among cardiac remedies. Bucquoy considers that **Convallaria** and **Strophanthus** are less trusty but are better tolerated, and are not cumulative. **Scoparius** is best for regulating the heart beats, and strophanthus for allaying dyspnœa and angina pectoris. One fact is undeniable, that digitalin and strophanthin no more represent digitalis

and strophanthus than morphia does opium, or quinine cinchona. Constantine Paul considers convallaria as one of the best heart medicines, because after producing cardiac regularity it will keep it up a long time. Nothnagle thinks that strophanthus resembles digitalis in its action, but is not nearly so powerful or certain in its results. He regards **Caffeine** as a drug which acts principally on the kidneys, and, properly speaking, would be described as a diuretic rather than a cardiac remedy. This drug offers great advantages when given alternately with digitalis, and the effects produced are often remarkable.

The action of **Iodide of Potassium** upon the heart has been experimentally studied by Germain Sée, and the resulting paper is very valuable. His experiments were conducted on numerous dogs, and both potassium iodide and sodium iodide were employed. The objects of these experiments were to ascertain : (1,) The blood pressure under the influence of these salts ; (2,) Whether they produced vaso-constriction or vaso-dilatation ; and (3,) The conditions of the mode of their action. It is known that the salts of potash excite the heart and the vaso-constrictor nerves, and raise the blood pressure. Nothing of the kind takes place with the salts of soda. Sée has first verified that the radicle potassium conferred on its iodide the properties of the salts of potash. When iodide of potassium or iodide of sodium is injected into the blood, phenomena are observed which present two distinct phases. Sée designates the first "the phase of the alkali," and the second "the phase of the iodine." When the iodide of potassium is employed the phase of the alkali is distinctly characterized. The heart's beat is accelerated, and the tracings of the registering manometer bear great oscillations, which are slow and regular. When the iodide of sodium is employed the phase of the alkali is indicated by a very slight elevation of the pressure and slowing of the action of the heart, with occasional intermissions. The phase of the iodine corresponds with the injection of either of the two salts, and it is indicated by the pressure which descends slowly in a continued manner, and by the action of the heart, which is accelerated. Sée offers in explanation of this similitude that the iodide of potassium is decomposed, that the potassium is eliminated, and the iodine is thus found in the blood, combined with the sodium, whatever be the iodide primarily injected. The iodide of potassium first determines the phenomena of excitation with the action of the heart accelerated, an elevated pressure, a manifest vaso-constriction, then follows vaso-dilatation with low pressure. In the vaso-constriction with elevation of pressure and the strengthening of the heart due to the *potassium*, the vaso-dilatation and lowering of

pressure due to the *iodine*, we have the explanation of the powerful effects of the action of iodide of potassium. The vaso-dilatation explains the hyperæmia of the bronchial mucous membrane and the hypersecretion which results from this drug, and which is so useful to asthmatics for getting rid of viscous secretions. It explains the pulmonary hyperæmia which results from the venous stagnation in cardiac subjects. It also explains the anti-dyspnœic power of the iodide of potassium in facilitating the circulation in the medulla, and consequently restoring it to its normal functional activity. The vaso-dilatation explains, finally, how the heart becomes freed from the obstacles which the tonicity of the arteries presents to it, how the coronary circulation becomes more free, and how the heart thus becomes reinforced and its strength increased. In addition to all this, iodide of potassium primarily strengthens the heart. It results from these considerations that this drug is applicable to the greater part of the diseases of the heart and of the coronary arteries. It is only contra-indicated when it causes hæmorrhages or permanent gastric iodism. Iodine reduces the fatty element in fatty degeneration of the heart. In fibro-adipose degenerations, in sclerosis, the remaining muscular fibres are improved in function through increased circulation. Hence the indication for iodide of potassium in all cases of dilatation or degeneration. In coronary sclerosis it is useful in dilating the coronary vessels which have remained free and healthy. In false angina it has incontestable advantages combined with **Antipyrin** or with inhalations of the vapour of **Pyridine**. In Basedow's disease, where there already exists a morbid vaso-dilatation, the iodide of potassium, the author thinks, is useless, or even dangerous.

In conclusion, it is pointed out that the drug, far from being a depressant, is really a cardiac tonic of almost equal value to digitalis or strophanthus in certain cases. It is the real cardiac drug, since, when prescribed in cases of uncompensated mitral lesions or affections of the myocardium it increases cardiac power and raises vascular tension. Thus by subsequently causing dilatation of the arterioles, it enables the heart to recover its power and affords also better facilities for the coronary circulation, thus improving the nutrition of the heart muscles. In this connection it may be of interest to note that Huchard claims that the iodides may actually cure arterio-sclerosis and prevent angina pectoris when given in doses of from 45 to 60 grains daily for three or four years, taking care to suspend its use for eight or ten days each month, during which time **Nitro-glycerin** is administered.

Bucquoy, who is now recognized as a most enthusiastic advocate of the use of strophanthus, has added to the literature of this subject a

careful sphygmographic study of this drug. He finds the strophanthus tracing characteristic ; the ascent of the curve reaches a higher level, the line of descent falls more abruptly. In short, the characters of the collapsing or aortic regurgitant pulse are reproduced. His observations were made upon all varieties of valvular diseases, and upon all combinations of these lesions. The indications for the use of strophanthus, he says, is in every case *ventricular incompetence.* The increased force of the ventricular systole caused by the drug is accompanied by a diminution in the frequency of the pulse, and by an attempt at regulation, but in many cases the pulse remains irregular. Strophanthus action is best shown in cases of aortic disease, because an increased ventricular beat must become more manifest, when the whole force of the stroke issues through the aortic opening than when, through mitral incompetence, only part of this stroke reaches the pulse. Bucquoy believes that strophanthus does not increase arterial tension. In cardiac failure strophanthus possesses the advantage of rapidity of effect, of sustained action, and of tolerance. It is, however, generally considered to be less permanent in its action than digitalis.

Demme, as the result of a trial of strophanthus in the cases of twenty-one children suffering from cardiac diseases, scarlatina, nephritis, asthma, and some other ailments, has arrived at the following conclusions : (1,) The drug may be given to children as early as the fifth year in doses of not more than 3 drops of the tincture repeated four or five times ; (2,) The special effect is to increase diuresis and diminish dropsy in ailments where blood pressure is normal or raised diuresis does not occur ; (3,) The dyspnœa of chronic nephritis, asthma and whooping cough is much relieved ; (4,) Digitalis holds first place for rapidly producing compensation or raising blood pressure, and if it fail we cannot expect strophanthus to do good. But if, when compensation has been brought about, a diuretic effect is still required, or if there be dyspnœa, strophanthus may be given with advantage. The reporter would call attention in this connection to the statement made in the "Annual" for 1889, that strophanthus *will* sometimes do good when digitalis has failed, and *vice versa.* This is the case in adults beyond a doubt, and it would seem as though the same rule should hold good in the case of children.

Nothnagel refers to the value of cardiac remedies in the following order : Digitalis, of course, stands first. Remedies inferior to this drug are convallaria, adonis vernalis, gr. 46 to 92 daily, squill and sodio-salicylate of caffeine, gr. 3 to 6, five times daily—a diuretic to be recommended on the days when digitalis is not administered ; absolute milk diet, and tincture of strophanthus 8 drops twice or thrice daily for

fourteen days. As a last resort, as exerting a direct influence on the kidneys, calomel may be given in the now familiar method of 3 grain doses four times a day for three or four days, with the usual precautions against salivation and diarrhœa. Powerful thermal carbonic acid baths, which excite the heart, must be avoided. Cold baths may be used with great caution when indicated on other grounds. Chalybeate waters are contra-indicated in heart disease with cyanosis. As long as compensation is preserved cold water treatment is admissible, avoiding too low temperature (57° F. and under) and too severe measures. Passive movements have generally a favourable influence. Oertel's treatment, whilst indicated in myocarditis, fatty heart, and idiopathic cardiac hypertrophy, is never suitable unconditionally for uncompensated valvular disease, and only admissible at the period of commencing disorder of compensation. One feature of this treatment, diminution of the fluids allowed, is always advisable. For mental anxiety, restlessness, and neuralgic attacks, morphine may be administered hypodermically as a hypnotic, but only when paraldehyde, sulphonal, and chloral have failed.

Huchard claims that, contrary to the common view, caffeine administered by hypodermic injection is a powerful cardiac stimulant, and superior to ether. He cites a case in which a patient suffering from pneumonia received ninety-five injections of *4 grains each* of caffeine in the space of thirty days ; also a case of typhoid fever in which fifty similar injections were employed, and terminated in cure. Huchard insists upon the necessity and utility of large doses, and states that he does not hesitate to employ doses of from 30 to 45 grains of caffeine in the twenty-four hours, administered subcutaneously. He claims that caffeine, before acting upon the heart, exercises marked action upon the central nervous system. There is thus a marked difference in the action of digitalis and caffeine, the former being primarily a cardiac remedy, the latter acting first on the nervous system.

Gauthier has published an important essay on the mode of administration of cardiac remedies. As is well-known the administration of digitalis in the form of powder or pill is apt to produce vomiting or diarrhœa. The best form is the infusion made by macerating the digitalis leaves. It is the preparation which gives the most prolonged and intense action on the heart, and which is most efficacious in producing diuresis. The infusion should be given in gradually decreasing doses. Digitalin is by no means a constant preparation, and it does not possess all the properties of the digitalis leaves. Nevertheless, the crystallized digitalin is of use where an extremely rapid action is desired, although ordinarily its action is too intense, and therefore

dangerous, while its subcutaneous employment is extremely painful, and is apt to lead to the production of abscesses.

Convallaria is best employed in the form of maceration, 8 to 10 parts being macerated in 1000 of water, to which syrup may be added and employed the day in which it is made. Convallarine, the active principle, may be administered in doses of $\frac{1}{6}$ to $1\frac{1}{2}$ grains.

Strophanthus is best employed in the tincture in 5 drop doses three times a day, though 10 to 20 drops may be given once or twice in the twenty-four hours in a single dose (10 drops three times a day to every three or four hours is not considered an excessive dose with us. The reporter has often failed to obtain good results with 5 drop doses when the larger dose, 10 drops, has been followed by the most happy results).

Adonis may be employed in the form of an infusion or decoction, or its active principle, adonin, may be given. The infusion is inconstant in its activity, and both the watery preparations have an extremely bitter taste, which must be covered by syrup. Adonin may be given in the quantity of $\frac{1}{8}$ to $\frac{1}{2}$ of a grain in twenty-four hours.

Caffeine is a reliable remedy provided it be given in sufficient dose, ordinarily 15 to 30 grains in the twenty-four hours. This dose should not be exceeded without great care, as in larger quantities it is not free from danger. The salts of caffeine are nearly insoluble in water, and are, therefore, not suitable for subcutaneous injections, but the double salt, the benzoate of sodium and caffeine, is an exceedingly valuable preparation.

Sparteine may be employed, either in the form of infusion or decoction of the plant, or its active principle, sulphate of sparteine, may be employed, the latter being especially valuable for its action on the heart, in doses of from $\frac{3}{4}$ to 4 grains in the twenty-four hours. The infusion is especially endowed with diuretic properties.

REFERENCES.—"Phil. Med. News," Feb. 1, 1890; "Therap. Gaz.," Sept., 1889; "Lancet," Oct. 26, 1889; "Rev. Gen. de Clin. et de Thérap.," Aug. 8, 1889; "Brit. Med. Jour.," June 14, 1890; "Wiener Med. Woch.," Nos. 2 and 3, 1890; "Central. f. Klin. Med.," No. 36, 1889; "Rev. Gen. de Clin. et de Thérap.," June 20, 1889: "Wiener Med. Blätt," May 22, 1890.

Synopsis.—(Vol. 1889, p. 281.) **Sulpho-Carbolate of Soda**, grs. xxx; with **Inunction of Carbolized Olive Oil** in endocarditis; **Baily's Pill** (Digitalis, Squills, and Mercury), as diuretic. *As tonics.*—**Delphinium Staphisagria**, useful, probably, in small doses (p. 37); **Veratrum Viride**, gtt. x to xx of 1% solution in palpitation, due to gastric disorder (p. 43); **Veronin** (the glucoside of Vernonia Nigritiana), allied to **Digitalin** (p. 71). *Cardiac Stimulants.*—**Menthol**, grs. v to xx (p. 52); **Nerium Odorum**, 5 centigrammes in pill, probably of special value in neurosal cardiac affections; also as diuretic diminishing œdema (p. 56).

(Vol. 1890, p. 286.) Nitrite of Amyl, Chloral Hydrate, Nitro-Glycerine, Opium, Potassium Iodide, to relieve abnormal heart's action; Morphia and Digitalis combined, in cardiac asthma; Digitalis, Strophanthus, and Barium Chloride (gr. $\frac{1}{10}$ t.i.d.) as cardiac tonics; Lactose (3 oz. to 4 pints of water each day using no other fluids) is a strong diuretic; Beef Tea as a cardiac stimulant. In simple heart weakness, as in course of an acute illness, injection of Salt Solution, 6%, of which 20 to 30 grammes are first injected, and then 5 grammes daily; Electrical Stimulation.

HECTIC FEVER.

Synopsis.—(Vol. 1889, p. 287.) Antipyrin, ℥j of 1% solution, about half an hour before temperature rises, then ℥ss hourly until it falls below 38° C., continuing thus for four or five days, and increasing the strength of the solution if necessary.

HEMIANOPSIA. *Graeme M. Hammond, M.D., New York.*

Dr. Gilman Thompson and Dr. Sanger Brown, after a series of experiments performed at the Loomis Laboratory, conclude that in dogs and in cats the decussation of the optic nerve fibre in the optic commissure is complete; so that when the cortical visual centre, which in these animals is situated in the posterior part of the occipital lobe, is excised, complete blindness in the opposite eye follows. This blindness is only temporary if the incision is not made deeply. In man and in monkeys only half the fibres are decussated. Hence removal of the posterior part of the occipital lobe produced hemianopsia, which, however, is transient unless a large part of the white matter beneath the visual centre, or unless more than one occipital convolution is removed. When the angular gyrus was extirpated hemianæsthesia was developed on the opposite side of the body, which lasted about six weeks. Other observers show that lateral homonymous hemianopsia in man results from lesions in several parts of the occipital lobe, Déjérine and Sollier have reported a case of permanent hemianopsia, due to softening of the first and second occipital, and the first and second occipito-temporal convolutions. Seguin and others have reported cases in which the cuneus only was involved. Dr. James Anderson and Mr. Doyl have shown cases of temporary homonymous hemianopsia, and in every case the lesion was discovered in the occipital lobe. The lesions were small in extent and were not deep, which accounted for the transient character of the hemianopsia. Lesions of the angular gyrus in man result in word-blindness. Lesions of both the occipital lobe and the angular gyrus is followed by lateral homonymous hemianopsia and by word-blindness.

REFERENCE.—"Lancet," March 22, 1890.

HEMIPLEGIA. *Graeme M. Hammond, M.D., New York.*

Dr. Bastian divides cases of hemiplegia into three great groups. The first of these contains the cases of abrupt onset due to hæmor-

rhage, embolism, and thrombosis; the second includes cases of abscess, hydatid cysts, and pachymeningitis, or tumours, the paralysis here being of slow onset; the third class embraces those cases known as functional or hysterical hemiplegia. The diagnostic features of this latter type are: (1,) That the face escapes paralysis; (2,) That there is paralysis of sensation associated with motor paralysis; and (3,) That organic disease can be excluded. The treatment consists of efforts directed to the improvement of the nutrition of the general health, both physical and moral, and the application of **Faradization** or of the **Wire Brush** to the skin over the anæsthetic areas. Cases due to hæmorrhage or to vascular occlusion tend to produce softening in the brain. The prognosis in this class of cases must be estimated by the degree of coma, the flaccidity of the limbs, the amount of stertor, and the rectal temperature; this latter, in slight coma, may not fall below 96° (99·4° being normal). If it drops to 95° or 94° and remains at that point for several hours, the patient will very likely die in an hour or two. If the coma is deep and continues for twenty-four hours the risk of fatal issue is great. In regard to the treatment of these cases, the patient should be put to bed in a cool room, **Cold Applications** should be made to the head and **Hot Bottles** applied to the feet. If the face is much flushed, 20 grains of **Bromide of Potassium** and 4 or 5 minims of **Tincture of Aconite** may be given to lower the vascular tension and thus check further bleeding. If a diagnosis of occlusion of a cerebral vessel can be made the tension within the vascular system should be increased to assist in promoting anastomosing channels. **Stimulants** in moderate amounts, and **Digitalis** with **Ether** or **Aromatic Spirit of Ammonia** are indicated. If the paralysis is due to hæmorrhage this treatment would be most harmful, for in such a case the action of the heart should be depressed and the vascular tension diminished. In those cases in which the paralyzed muscles are flaccid, **Faradization** is beneficial, and **Liquor Strychniæ** in 3 or 4 minim doses, with **Liquor Arsenicalis** and the **Citrate of Iron** and **Ammonia**, also assists recovery. Proper food and sleep and fresh air should be insisted on.

In those cases in which the paralyzed muscles become rigid nothing can be done.

Where abscess of the brain can be diagnosed and located, surgery affords the best method of relief.

REFERENCE.—"Lancet," Mar. 8, 1890.

Synopsis.—(Vol. 1890, p. 298.) **Massage** and gentle **Faradisation**; diminish quantity of highly nitrogenized food, and keep bowels free; small doses of **Mercury** and **Saline Aperients** if arterial tension be high; strychnine contraindicated in cerebral paralysis.

HERNIA. *A. W. Mayo Robson, F.R.C.S.*

In non-strangulated hernia the feeling of the profession is practically the same as it was in 1887, when Mr. Mitchell Banks gave his paper at Dublin. It was then generally accepted that if a hernia could be retained by a well-fitting truss, no operation should be done.

Mr. Stanmore Bishop in the "Lancet," for May 31st, 1890, raises the question whether this rule ought not to be broken in many instances, both on account of the expense and inconvenience of wearing a truss. He describes an operation which he himself has devised, apparently a modification of McEwen's, the sac being retained, invaginated, and turned inside out, it being so placed over the internal ring that its peritoneal surface is turned towards the intestines. The method will be better understood by reference to the following diagrams (*Figs.* 37, 38, 39).

A review of the different methods of performing the radical cure of hernia appears in the "Brooklyn Medical Journal," for November, 1889, by Dr. Fowler. He concludes by saying that the radical cure is one of necessity in all young persons whose existence depends on manual labour; it is one of convenience among the richer classes; in all strangulated herniæ it should be performed; McBurney's operation should always be done. The patient should be recumbent for six weeks after the operation. No truss should be worn. If these conditions be fulfilled, the patient if under twenty-five may be assured of a cure, if older the proportion of cures averages at least 50 per cent. The mortality is practically *nil*. The distinguishing peculiarity of McBurney's operation consists in the treatment of the edges of the incision by hemming them so as to leave an elliptical-shaped gap at the site of the inguinal canal, which is kept open by firm packing, the patient being recumbent during the process of healing. The gap fills up in about six weeks with a firm cicatricial plug which affords a firm barrier against the re-descent of the hernia.

In the "Bristol Med. Chir. Jour.," for March, 1890, Mr. Greig-Smith draws attention to a method which he has adopted for the radical cure of hernia, which seems to combine the principle of twisting the sac suggested by Dr. Ball, together with a modification of McEwen's operation. We have employed this method on several occasions with advantage.

An interesting paper was read by Dr. W. T. Bull, before the American Surgical Association at Washington, on May 14th, 1890, "On the Radical Cure of Hernia with the Results of one hundred and thirty-four Operations." The paper concludes by stating that the majority of cases will be found to relapse if followed for a sufficient

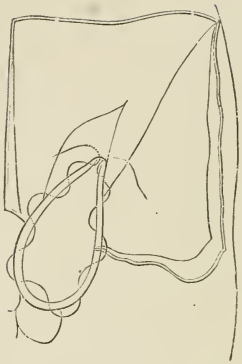

Fig. 37.

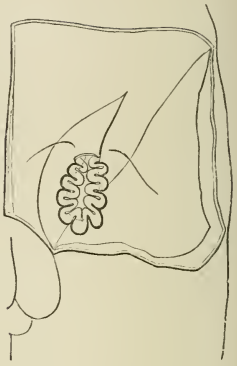

Fig. 38.

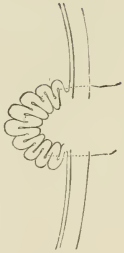

Fig. 39.

time ; the results being no better by the more complicated methods of suture of the ring alone, or of the ring and canal, than by the simpler method of excision of the sac after ligature. Dr. Bull stated, therefore, that he should confine himself to the latter method of operation till other procedures which had stood the test of years made a more promising show.

An interesting article "On the Mechanical Treatment of Hernia by means of Trusses," appeared in the "New York Med. Jour.," for December 7th, 1889, by Dr. Milliken.

Dr. Willis McDonald of Albany, New York, describes in the January number (1890) of the "American Journal of Obstetrics," a successful case of abdominal section performed six hours after birth in a case of congenital umbilical hernia. The walls of the sac were thin and translucent and the congested intestine could be seen through it. The sac was excised and the abdominal wound closed by means of silk sutures. The article includes a table of nineteen similar recorded operations of which seventeen recovered. Out of twelve cases treated by compress and bandage only three recovered.

Dr. O'Dwyer of New York reports in the "Archives of Pediatrics," for December, 1889, an operation performed for the relief of a congenital diaphragmatic hernia. After excision of portions of the ninth and tenth ribs, an aperture was found in the muscular portion of the diaphragm about one-and-half-inches in diameter. After some difficulty the intestines were replaced and the opening in the diaphragm was closed, but death occurred six hours after the operation.

An interesting paper by Pietrzikowski, "On the Relation of Inflammation of the Lungs to Strangulated Hernia," appeared in the "Archiv. f. Klin. Chirurg.," xxxix., pp. 501-516. As the result of his observations on four-hundred cases of strangulated hernia he comes to the following conclusions : (1,) After the reduction of a strangulated hernia, either by taxis or by herniotomy, symptoms of hæmorrhagic infarct into the lungs are observed in a considerable number of cases ; (2,) The lung symptoms are usually observed in those cases in which the blood flow, though the loop of strangulated intestine is not completely interrupted, and where the loop is in the first stage of change, (venous stasis or commencing hæmorrhagic infiltration) is capable of recovery, and can be replaced by operation ; (3,) If the loop of incarcerated intestine shows signs of gangrene and is in consequence not capable of restoration, the infarcts in the lung are usually not observed ; (4,) The lobular and lobar pneumonia observed after reduction of incarcerated hernia depends on infarcts in the lungs, which may be ascribed to changes in the intestinal wall.

The result of a consideration of the autopsies of fatal cases of hernia showed: (1,) In most cases of reduced hernia pneumonia was observed; (2,) The number of cases of lobular pneumonia was much greater than of those of lobar pneumonia; (3,) That lung changes were present in those cases in which slight changes had taken place in the loop of gut.

Two rare forms of hernia have been reported this year, one by Dr. von Tischendorf in the "Brit. Med. Journ.," for July 19, 1890, of hernia of the fallopian tube; and the other by M. Routier, in the "Annales de Gynéc.," for Sept., 1890, of ischiatic hernia of ovary.

REFERENCES.—Brit. Med. Jour.," April 12, 1890; "Lancet," Feb. 8, 1890; "Brit. Med. Jour.," Feb. 1, 1890; "Lancet," May 10, 1890; Ibid., June 7, 1890; Ibid., Sept. 13, 1890; Ibid., Oct. 18, 1890; Ibid., Nov. 8 and 15, 1890; "Central. f. Chronic." No. 36.

HERPES ZOSTER. *W. Allan Jamieson, M.D.*

Etiology.—That epidemics of zoster do occur Kaposi is willing to believe. He thinks that zoster, erysipelas, and pneumonia are all children of the same "genus epidemicus." Epidemics of zoster occur in Vienna in the spring and fall and with considerable regularity, while at other times sporadic cases of the disease occur. Because micro-organisms have been found to account for the appearance of pneumonia and erysipelas, Kaposi assumes a micro-organism in zoster, and believes it to be infectious because it occurs, like other infectious diseases, but once in a lifetime. He affirms that in some epidemics of zoster the manifestations of the disease are far more severe than in others. He can offer no explanation for the unilateral appearance of the disease—something that we would not expect in an infectious disease.

Zoster Gangrænosus and Zoster Hystericus are two new terms introduced by Kaposi. Four cases of atypical zoster are reported. They were all marked by ulceration, and were followed by keloidal cicatrices. The loss of substance was similar to that which results when caustic potash or nitric acid attacks the skin. But in zoster the change begins in the papillary layer of the skin and in the corium before the epidermis is affected. It is not the same process as has been before described as spontaneous gangrene of the skin, as there the process is superficial and is marked by relapses continuing over a great length of time. Here we have also a characteristic grouped efflorescence and a self-limited course, so that in from four to eight days the eruption is at an end, and only the effort at repair remains. The only objections to calling the disease zoster are that it is liable to relapse, it does not correspond in location to the course of any spinal

nerve, nor to that of the trigeminus, and it is bilateral. Still, relapses do occur, though rarely, in zoster, and zoster does occur bilaterally. It is probable that in these cases not only were the spinal ganglia diseased, but also the vaso-motor centers of the spine, and probably of the brain. Hence the name "hystericus."

TREATMENT.—Under the inspiration of Professor Leloir, Dr. Dupas, of Lille, has just published a thesis on this subject. **Alcohol** of 90 per cent. strength, or a solution of 2 parts of **Resorcin** to 100 of **Alcohol** can be employed as a dressing; or, again, 1 gramme of **Thymol**, or 3 grammes of **Menthol**, or 25 centigrammes of **Phenic Acid**, or 2 grammes of **Tannin** to 100 of 95 per cent. **Alcohol**. If these solutions cause too much pain, a little **Cocaine** may be added. Compresses moistened in one of these solutions are to be applied upon the lesions, and over this is spread some impermeable material. Absorbent cotton may likewise be used. These dressings must be changed frequently during the day. Under the influence of this treatment the herpetic eruption is seen to abort rapidly—in the course of a few hours sometimes, if made at the onset. If the herpes have already reached the period of suppuration, the vesico-pustules and pustules rapidly disappear by drying up, and no new ones are produced, while the surrounding redness diminishes with equal rapidity, and the duration of the attack is much shortened. The element of pain is equally subdued, and it is not rare to see rebellious neuralgias from herpes zoster give way in a few hours by the employment of this method.

REFERENCES.—"Wien. Med. Woch.," 1889, No. 25: "Archiv. für Derm. u. Syph.," 1889, xxi., 561; "Jour. Cut. Dis.," vol. vii. No. 87.

Synopsis.—(Vol. 1889, p. 291.) *Locally*, a dusting powder or mild astringent lotion. In herpes zoster $\frac{1}{3}$ of a grain each of **Zinc Phosphide** and **Ext. of Nux Vomica**, every three hours, eases pains and aborts the eruption; if neuralgia follows, **Arsenic, Strychnine, Quinine**, or **Ol. Menth**, are indicated.

(Vol. 1890, p. 301.) When vesicles are present to prevent suppuration use **Sulphur** in the form of a gelatinous paste of **Sulphate of Zinc**, or lotions of **Corrosive Sublimate, Iodoform, Carbolic Acid**, or **Resorcin**. To abort vesicles, apply **Ichthyol** mixed with water and painted on, or a strong paste of **Zinc** and **Resorcin**; salicylate of soda, gr. x, every four hours proved useful.

HIP JOINT (Abscess of). (See "Orthopædics.")

HYDATIDS.

Synopsis.—(Vol. 1800, p. 304.) Irrigation with 6% solution of **Boric Acid**, and injections of **Ox Gall** mixed with equal quantity of lukewarm water.

HYDROA, DERMATITIS HERPETIFORMIS.

Synopsis.—(Vol. 1889, p. 292.) Change of air, nutritious diet, avoidance of **Alcohol**, tonics, **Ol. Morrh**; **Quinine**, grs. ij to x; **Liq. Arsenicalis** up to

mlviij or x; **Tinct. Belladonna**, mlxv to xxx, with **Sulphide of Potassium Baths**, ʒij to 4 or 30 gallons, or use **Antipruritic** lotions, *e.g.*, **Liq. Carbonis Detergens.** If nervous depression be present, give **Nux Vomica** and **Phosphoric Acid.**

HYDROCELE.

Synopsis.—(Vol. 1890, p. 305.) Injection of **Liq. Hydrarg. Perchlor.** three times the strength of the B. P. solution.

HYDROPHOBIA. *Frank J. Wethered, M.D.*

Dr. F. Lucas Benham has collected together the reports of fifty cases of hydrophobia, which were reported as successfully treated. Such a collection is capable of yielding valuable results. After giving an abstract of each, with the treatment adopted, he sums up thus: One point is striking about almost all the successful cases, viz., that decisive treatment was commenced at an early stage of the disease, before it had progressed far enough to be hopeless. This should enforce the importance, not only of the kind and vigour of the treatment, but of prompt diagnosis, and of not losing any time in taking active measures. Of the various modes of treatment it seems to me that of any single kind very copious bleeding is the surest. **Mercury** alone or combined with it is also tolerably sure. Only a few cases have been reported of failure after *very large* bleedings. Cold affusion or **Vapour Baths** may also be successful, or sweating may be induced by **Pilocarpine**; **Curare** also, if pushed decisively, promises fairly well; **Chloral** and **Chloroform** may be useful to lessen the violence of the paroxysms, and may sometimes subdue them altogether; but morphia, especially in small doses, is not to be relied upon, even to procure relief, for it often only aggravates the disease.

HYDROPS.

Synopsis.—(Vol. 1889, p. 50.) **Kava Kava.** ℞ Ext., Kav. depur., grs. xlv; Sacch. Alb., ʒv., M. Ft. Pulv., Divid. in part, x. Sig. Pulv. j 3tis. hor. as diuretic.

HYPERHIDROSIS LOCALIS. *W. Allan Jamieson, M.D.*

Legoux ("Les Nouveaux Remèdes) recommends the following:—

℞ Perchloride of Iron	ʒiij	Essence of Pergamot	ʒij.
Glycerin	ʒj	Mix.	

Apply with a pencil or swab.

Synopsis.—(Vol. 1890, p. 305.) When the parts are cold, bathe at night with **Hot Water** to which **Camphor, Mustard, or Vinegar** has been added. Then dry and use, ℞ Turpentine 5 parts, Ichthyol 5 parts, Oxide of Zinc 10 grammes, M.; Ft. Ung. In the morning wash off the ointment and use friction with ice-cold water till skin is warm, and powder with a powder containing mustard flour. If the parts are warm, use lukewarm **Baths** at night, following with 2½% **Ichthyol Ointment**, washing it off in the morning with lukewarm water and ichthyol soap, and leave on some of the dry soap suds.

HYPERTRICHOSIS. *W. Allan Jamieson, M.D.*

Dr. Arthur Jamison has found **Ethylate of Sodium** the most satisfactory remedy in hairy moles. The hair is to be cut short, and the ethylate rubbed in with a glass rod, till the surface assumes an orange or black hue. The crust so formed is allowed spontaneously to separate, for which a period of three weeks is sometimes necessary. Most of the hairs will be found destroyed, and a white, smooth scar left. Any hairs which remain can be dealt with by the same method, seriatim. In using the ethylate care must be taken that it does not run down over the sound skin, and the part treated must not be touched with water till the crust has come off.

REFERENCE.—"Practitioner," July and August, 1889.

Synopsis.—(Vol. 1889, p. 293.) **Electrolysis**; Introduction of a straight needle dipped in **Carbolic Acid.**

HYPNOTISM AND THERAPEUTIC SUGGESTION.

A. A. Liébeault, M.D., Nancy.

Besides the ordinary therapeutic method of treating disease by means of remedies introduced into the digestive canal or applied externally, we possess another mode of treatment, the effects of which have been recognized from very remote times. Those effects have long been correctly attributed to psychical causes, but it is only in our own days that the mechanism and the formation of those causes have been understood and explained.

In this newer therapeutic treatment, there is no question of the action of drugs absorbed internally or applied direct to the skin or mucous tissues. We have here to deal with an action, the cause of which cannot, like the effect of medicaments, be apprehended by the senses: with an action which originates within the brain of a patient, in the shape of ideas about his own organism—which ideas act by repercussion upon his body, and necessarily wherever there is a distribution of nervous matter. This action is exactly the reverse of the action of medicines, the effects of which pass from the extremities of the peripheric nerves to the lower nervous centres, and thence to the brain; while the treatment now in question has for its motive agents not material remedies, but ideas, which, originating in the brain, travel thence to act first upon the lower centres, and then upon the organs wherein the nerves have their termination. This treatment operates upon the body by addressing the nervous system wholesale, and at its fountain head instead of at its extremities and in detail.

This therapeutic method, though its psychical element was long ago recognized as the active cause of cure in cases where healing was effected through moral impressions or religious ecstasy, yet found

in Braid the first observer who really educed its vital principle. Before his time, indeed, some had perceived, though but vaguely, that in our waking state we are able, by our thoughts, to modify our organic functions. Goethe, for instance, Kant, Feutesleben, recognized within themselves a moral force, by which they could remove the ailments they already had, or avert those by which they were threatened. The mind was even then supposed to be inactive during sleep, and to become so at the first approach of drowsiness; but the faculties which were attributed to it were still but ill-defined. Braid demonstrated, in respect of the movements he had seen employed to induce sleep in certain subjects, that the state thus obtained was brought about by the concentration of their minds upon some object of thought. He remarked also, that the passes and manipulations to which those persons were subjected during their sleep more effectively excited in them the fixed idea of recovery than any like treatment undergone by them in their waking condition. These two important facts—the production of sleep by concentration of the mental faculties, and the moral action which, assisted by manipulation, has, during that condition, a healing influence upon the body of a patient—form the groundwork of the new system which we now call Hypnotism. It is from the former of these facts that I draw my theory of the production of artificial sleep by means of verbal or direct suggestion, which theory is based upon the principle maintained by Bichat: that when nerve force is concentrated upon one part of the animal economy, for instance, upon the eyes, it is diminished in other parts. And it is from the latter—the increased susceptibility peculiar to subjects in hypnotic sleep—that I infer the usefulness of this susceptibility in the treatment of disease, that is, when it is assisted by verbal or direct suggestion. The substitution of verbal suggestion for the silent and indirect suggestion of Braid is an important event in the history of therapeutics. Audible suggestion is a potent lever, whether we employ it to induce sleep, as did Faria, or to establish a cure, during the waking state; but it is especially powerful in artificial sleep, when its healing action upon the tissues is strengthened in proportion to the concentration of the mind in that state.

I will not enlarge upon the numerous scientific discoveries of which verbal suggestion has been the starting point, but will confine myself to the domain of the new therapeutic treatment, wherein suggestion works wonders. Since the mind of a patient is far more easily imbued with the idea of cure during induced sleep than during his waking moments, it is important that I should make known to my readers what I consider the best method of obtaining this sleep.

Having caused my patient to recline in an arm chair, or better still, upon a sofa, I bid him fix his eyes upon mine. While his mind is concentrated upon obeying me, while his other senses are becoming dulled and impercipient of impressions from without, I recapitulate to him the preliminary phenomena of sleep: torpor of the limbs, drowsiness, heaviness of the eyelids, etc.; and when I notice that the eyelids quiver and droop, or that the eyes assume a surprised and dazed expression, I give the word of command—*Sleep!* If after that injunction the eyes still remain open, I repeat my list of affirmations, and finally, close my patient's eyelids. In the cases of workmen, peasants, children, and soldiers, who all are accustomed to obey, the eyes generally close mechanically when I say the word *Sleep!*

There is nothing new under the sun. I adopt a method which has long been known to magnetisers, and I add on to it verbal suggestion, employed long ago by Faria to induce sleep. But I add also something more. I take into account our proneness to imitate the actions of our surroundings, and the ease with which we are borne into slumber when our minds are reassured and calm. Therefore, I hypnotise each of my patients in the presence of fifteen or twenty others, so that while each awaits his turn he may become familiarized with my method, and interested in the results which he is allowed to witness. He is thus led to forget himself, and falls under an imitative influence which leads him, when his turn has come, to pass easily into the same state which he has watched his neighbours entering.

I have, of late years, succeeded in hypnotising over nine-tenths of my patients by the above method. My failures have, for the most part, been persons who have purposely resisted the somnolent impulse, or whose minds have been disturbed by some pre-occupation or emotion: such as, a dislike to being watched by other patients; fear of an unknown and to them mysterious treatment; a feeling of pain or discomfort; an inclination to hysterical tears or laughter, etc. Others again have remained uninfluenced because of the ultra-sluggishness or the ultra excitability of their mental faculties. The former cause has operated in aged or decrepit persons, and idiots; the latter in maniacs, hypochondriacs, etc.

The theory of the production of sleep being once understood, it is easy to understand how the awaking is accomplished. As the state is brought about by suggestion, so by suggestion it is dispelled. It generally suffices to bid the patient awake, but he is often helped to obedience by the waving of a fan or screen in front of his face. This indirect suggestion, and the sensation of coolness, add their influence

to the verbal command, and the patient emerges from the hypnotic state even more readily than he entered it.

This method of inducing and dispelling sleep is not only the surest and most speedy, but also the most scientific, seeing how it increases our knowledge of the psychical mechanism whereof it is the expression; and it almost invariably succeeds when the hypnotiser has confidence in himself and a proper amount of experience. But with a view to saving time, I have simplified the process by omitting some portions of my formula, and I now find it sufficient to let patients watch my treatment of others, while I impress each one of them with the idea that he also, directly he is seated in the arm chair provided, will certainly fall asleep as quickly and easily as at night he falls into his natural sleep. This plan succeeds in the majority of cases. The patient is no sooner seated in the arm chair, than he falls into the hypnotic state, for which his imitative instinct and his expectation of sleep have prepared him. This more concise method was, before I adopted it, practised by Prof. Bernheim, who thus avoided the more tedious process of fixing the patient's gaze and repeating a formula.

The insensibility of the organs of sense in a hypnotised subject, the immobility of his body, and his abnormal mental inertia, all tend to prove that his attention, having been completely directed upon the idea of sleep, remains of necessity fixed upon that idea, and cannot let go of it. The fundamental and dominant characteristic of the condition is, the subject's absolute incapability of any effort to hold communion either with the outer world, through his senses, or with himself, by the exercise of thought. He is the puppet of one fixed idea, and has lost the power of *will*. In profound hypnosis the hypnotist alone is in touch with his sleeping patient. He only can influence the mind of the sleeper, and this latter is moved by his lightest word, lies at his mercy, and is in his power. Thus it is that verbal suggestion can in so great a measure direct the nerve-power of a hypnotised subject, can concentrate it upon the diseased portions of his organism, or guide it away from them. Science has gained this—that the hypnotised patient who suffers through the sluggishness of his bodily functions may be cured by having set before him the mental image of those functions in a state of healthy activity; while he whose functions are, on the other hand, abnormally active, may be equally benefited by a negation of his disease. Or, which comes to the same thing, in many diseases the disappearance of morbid symptoms may be effected by suggesting to the sufferer that they *shall* disappear.

The same treatment may be, and frequently is employed for the cure of mental peculiarities, moral faults, bad habits, deficiency of will-

power, exaggerated emotional tendencies. While the subject is in the hypnotic state, his reformation from any such psychical faults is suggested to him. By degrees, his thoughts become concentrated on this suggestion; it dwells in his memory, and his brain ultimately retains the beneficial impression which it has produced.

Such is the suggestive method of treating disease. The results following its practice are always more satisfactory in hypnotised than in unhypnotised patients, and they are generally proportionate to the intensity of the hypnotic state. I do not hesitate to affirm, that in numerous morbid conditions the results are far more prompt and satisfactory than any obtained by the use of drugs. It sometimes, indeed, is requisite that the suggestive treatment shall extend over a long period, especially when the patient is but slightly influenced, or when his complaint either is essentially difficult to cure, or is beyond cure, and susceptible only of relief. In a large proportion of such cases, the treatment, if repeated daily and patiently, will assuredly do more than could medicines to restore health or alleviate suffering.

To insure the maximum of result, it is essential that the patient shall be put into the most advanced hypnotic state attainable by him. And for this reason, that the less his attention is distracted, the less he is in touch with the outer world, the more susceptible he is to suggestion. Nor should the operator confine himself to verbal suggestion of cure; to the direct, he should add indirect suggestion, by manipulation of or over the affected parts. Thus will spoken language be reinforced by sign-language, which has a decided, though indeed inferior, curative influence.

It seems to me that I have said enough of induced sleep and therapeutic suggestion to give the reader a sufficient knowledge of their nature and effects. Before concluding, I will merely point out to him the usefulness of hypnotic suggestion in overcoming certain diseases and vicious propensities which are frequently the despair of physicians. Hypnotic suggestion, whether direct or indirect is, as practised by me, wholly beneficial and absolutely innocuous to those persons treated by it; and I fearlessly assert, that whenever its use is followed by evil consequences, the ignorance or incompetence of the operator must alone be considered responsible.

Note on the above by Charles Lloyd Tuckey, M.D.

The foregoing article will be read with interest as it comes from the pen of the father of modern hypnotic therapeutics on the eve of his retirement from practice.

As Dr. Liébeault states, hypnotism is supposed to act on the highest

centres of the cortex in a specific and unique manner by inhibition and dynamo-genesis, and it is this action which is made use of in its therapeutic application. It is employed to produce physiological rest, to correct excessive and abnormal nervous discharges, to improve nutrition through the influence it enables us to exert over the trophic centres, and the circulatory, vaso-motor, and chylo-poietic systems, and as an anodyne and anæsthetic to relieve pain in surgical and obstetric practice.

Prof. Forel, and most other authorities, consider that in hypnosis we seek to influence function and organs through the brain, and that if the brain is diseased we therefore lose our *point d'appui*. Nevertheless, there are cases on record in which marked insanity has been benefited or cured by hypnotism ; and it is frequently successful in relieving the milder forms of mental derangement. In the borderland of insanity occupied by chronic alcoholism, morphinomania, and sexual perversion, the treatment is frequently of great service in relieving morbid craving and re-establishing self-control ; but the patient requires to be kept under observation for a considerable time. In brain-fag, nervous exhaustion, loss of memory, sleeplessness, and neurasthenia, hypnotism often proves useful, probably as much from the rest it gives to the higher brain centres, as from the improvement it brings about in general nutrition.

Functional nervous derangements are generally considered to be the chief field for hypnotic treatment, and, we find it useful and often curative in most forms of hysteria, and in many cases of chorea and epilepsy of functional origin. In occupation neuroses, such as writer's cramp, many cures have been reported, and even in organic diseases of the brain and spinal cord, *e.g.*, locomotor ataxy, infantile paralysis, and post-apoplectic paralysis it has been found to relieve symptoms and promote convalescence. It is supposed that in the hypnotic state we are able to affect functions of organic life which are normally beyond the control of the will, *e.g.*, menstruation, by disassociating the organism from the "life of relation" with which it is ordinarily preoccupied (Delboeuf). Hence we find hypnotism useful in treating menstrual irregularities, constipation, disorders of digestion, palpitation and other circulatory troubles, including even angina pectoris. Hypnotism has proved very helpful in urinary difficulties, especially nocturnal enuresis in the young, and "irritable bladder" in adults. In relieving pain in neuralgia and headache it acts quickly and often effects permanent cure. There is unanimity among those who have tried it as to its efficacy in muscular and articular rheumatism, not only in relieving pain but in modifying the course of the disease. As

Dr. Liébeault states, the deeper the stage of hypnotism induced the greater the hope of a speedy cure, but the production of unconsciousness or somnambulism is not, as a rule, necessary, nor, in fact, is it possible in the majority of cases. According to the theory of the school of Nancy, nearly every healthy person is susceptible to hypnotic influence, but only a third or fourth, at most, of those influenced become somnambulistic. The condition is asserted to be physiological rather than pathological, and its effect should be soothing and agreeable. The patient's confidence and co-operation should be gained, and nothing should be done to excite alarm or resistance. In the few instances reported where medical hypnotism has been followed by nervous complications the blame must rest with the operator for employing the treatment in unsuitable cases, in an injudicious manner, or for too long a period.

Hypnotism will no doubt take a place in medical practice as a curative agent in many otherwise intractable ailments which are none the easier to bear because they are of functional nervous origin, and as a palliative in many others, *e.g.*, in relieving the pain of cancer and the restlessness of acute illness. Its practitioners do not contend that it renders other forms of treatment unnecessary, but they employ it much as they use medical electricity—as an auxiliary in certain cases. The ease with which the hypnotic state can be induced in some persons and the ridiculous antics subjects can be made to play when deprived of the use of their intellectual faculties, have, unfortunately, led to much unqualified practice and to objectionable public exhibitions, but the better comprehension of its uses by the profession, and of its dangers by the public, will, it is hoped, soon stop this abuse of a therapeutic agent.

HYPOPION ULCER.

Synopsis.—(Vol. 1890, p. 312.) Brush 2½% solution **Nitrate of Silver** over conjunctiva after cauterizing the ulcer with the galvano-cautery, and using **Atropine**; **Eserine** is used where prolapse is about to take place, but iridectomy should be done here early. Where ozæna and recurrent hypopion ulcer exist, the ozæna must be treated by irrigations of **Perchloride of Mercury** solution, 1 in 2000, twice a day.

HYSTERIA (Anginal Attacks in). (See "Angina Pectoris.")

HYSTERO-EPILEPSY. ("See Epilepsy.")

ICHTHYOSIS.

Synopsis.—(Vol. 1889, p. 295.) Alkaline baths with friction followed by inunction of **Lanolin, Glycerine,** or **Olive Oil,** or **Ung. Sulphuris,** 5%, **Ung. Resorcin,** 3 to 20%; **Naphthol Ointment,** 5% These must be rubbed in night and morning at first, and afterwards twice a week.

IMPETIGO.

Synopsis.—(Vol 1889, p. 295.) Removal of crusts by oil packing or poulticing, followed by mild **Ammoniated Mercury Ointment**, v or x grs. to ʒj; **Calomel** or **White Precipitate**, v or x grs. to Lard ʒj.

INCONTINENCE OF URINE (In Young Women).

R. Milne Murray, M.B., F.R.C.P., E.

This condition, when not arising from cystitis is, according to H. Marion Sims, frequently due to hypertrophy of the muscular coat. He recommends for its relief the systematic use of injections of **Warm Water** to dilate the cavity and increase its capacity. A silver catheter is introduced and connected with a Higginson's syringe, and as much water injected as the patient can endure. The bladder is then emptied and the treatment repeated daily for one, two or three months. After the bladder can hold a pint the injections may be employed less frequently. The results in Dr. Sims' hands seem to have been very satisfactory.

Synopsis.—(Vol. 1889, p. 296.) **Electricity** by Guyon's method. **Rhus Aromaticus Tincture**, gtt. xx to ʟ daily. Ext. **Ergot Fluid**, gtt. v to x continued for two or three weeks for child from one to three years old; gtt. x to xx 3tis hor. for child from three to ten years.

(Vol. 1890, p. 315.) In children **Atropine** is useful, administering sufficient at four o'clock in the afternoon to dilate the pupil, repeating the dose at seven o'clock in the evening if they are not dilated; $\frac{1}{64}$ gr. for children from six to ten years old, and double this quantity up to fourteen years of age. In boys circumcision may be required. Painting meatus with **Collodion** in diurnal incontinence. **Strychnine, Ergot,** and **Rhus Toxicodendron**; passage of **Sound.**

INFLUENZA (EPIDEMIC).

Synopsis.—(Vol. 1890, p. 530.) To reduce temperature, **Quinine**, grs. xv to xx; **Salicylate of Soda; Salicine; Aconite**; to relieve headache, **Antipyrin**, grs. j to iv, also **Exalgine** and **Phenacetin**; in pulmonary cases, **Stimulant Expectorants**; in gastro-intestinal cases, **Opium**; in simple cases, **Tincture of Gelsemium**, drop doses every hour; **Tincture of Aconite**, with cardiac tonics such as **Digitalis; Strophanthus** or **Citrate of Caffeine** are required in many cases.

INGROWING TOE-NAIL.

Synopsis.—(Vol. 1890, p. 316.) Washing with **Perchloride of Mercury** solution, and then applying several drops of strong **Perchloride of Iron** solution; enveloping toe and nail in **Tinfoil.**

INJURIES.

Synopsis.—(Vol. 1890, p. 318.) As stimulants after shock, **Brandy** or **Sal Volatile** may be injected hypodermically; **Beef Essence** may be useful, also **Atropine, Ergot, Digitalis,** and **Ammonia** as vaso-motor stimulants.

INSANE. (See "Paralysis of the Insane.")

INSANITY. *Lionel A. Weatherly, M.D.*

In Nov., 1889, Mr. Brudenell Carter, as Chairman of a Committee appointed by the London County Council to inquire into the desirability of a hospital for this disease, submitted his report, and made certain recommendations concerning the management and working of such a hospital. We shall not go into these at any length, but merely say that they seemed based on the false impression that every symptom of any case of mental disease means some related disease of the brain, *or* that there is nothing *psychical* but everything *physical* in all mental derangements.

The only medical officer of this hospital, who was to have had asylum experience, was to be the senior resident medical officer. The medical staff were to consist of four visiting physicians, each of whom must hold office as physician or assistant-physician to a general hospital; a pathologist; a surgeon; an ophthalmic surgeon; an aural surgeon; a laryngologist; and a gynæcologist.

In an article on this subject in the "Journal of Mental Science," it is maintained that: "The idea that every hospital physician knows what insanity is, is a delusion and a snare," and we fully believe that the greater number of such physicians would endorse this opinion.

We fully recognize the fact that great results have already been attained by physical examination of brain function; we metaphorically applaud to the echo the work done in localizing brain areas connected with the special senses, but dare we hope that mental moods and distinct manifestations of the working of the mind can ever be so localized. As Dr. Yellowlees so ably puts it: "Has the most enthusiastic physiologist ever dreamed that he could localize in any spot of brain an all-pervading emotion like joy, or fear, or hope, or love?" That, nowadays, the mass of clerical work devolving upon asylum superintendents is far too great to admit of their working at individual cases as they would desire is a fact beyond dispute. It has long been recognized by all workers in psychological medicine; and they do not require outsiders to stimulate them in their endeavours to do all that is possible for the treatment and mitigation of this terrible scourge, insanity.

Look at the mass of evidence that has been already collected by asylum superintendents, overworked as they have been, and still are; proving that they are always alive to the possibility of physical causes for psychical manifestations in many cases. Is there any branch of medicine in which there are more ardent workers than that of psychology? and the attempt of the London County Council to snub this branch of the profession has met with the fate it deserved; for

the whole question has been put off *sine die*. No one gave evidence more to the point on this question than Dr. Clifford Albutt; and we fancy that Mr. Brudenell Carter and his Committee must have been greatly struck by the force of his arguments. Let us, however, hope that some good may be the outcome of their discussion, and that the staffs of our large asylums will be increased and the clerical work of the superintendent diminished, so that full time may be given for the energetic working of the medical men in this department of medicine.

Hypnotism in the Treatment of Insanity.—The value of hypnotism to those interested in experimental psychology cannot, I think, be doubted; but I fancy that the number of those believers in the more or less general therapeutic worth of this agent is limited—at least in this country.

Dr. Liébeault, of Nancy, was the first to point out the therapeutic value of purely empirical suggestion; but if it is admitted that if suggestion is to succeed, the patient must fairly believe that he is cured, it is somewhat difficult to imagine that much can be expected from its application to the cases of insanity, in the majority of which one great factor in the symptom of the disease is that the patient does not for one moment recognize that there is anything the matter with him.

Fovel, whose experiments have been wide and searching, thinks that a sound brain is above all things necessary for hypnosis, and is, therefore, of opinion that for this reason it is difficult to treat insane persons by hypnotism. In the first place the insane are, as a rule, not at all susceptible to its influence; and in the second place, even if deep hypnosis can be produced, the insane ideas and the various delusions of the senses are too fixed to be removed; the lunatic's diseased ideas are far too tenacious.

Still, Voison, Buckhardt, Fovel, and others maintain that great improvement may be induced by hypnotism in the lighter forms of melancholia and some cases of mania.

Dr. Percy Smith, the Resident Physician at Bethlem Royal Hospital, and Dr. A. T. Myers, Physician to the Belgrave Hospital for children, published a most interesting paper on this subject. Dr. Smith made several experiments on patients in Bethlem with the aid of the experienced hypnotist, Mr. G. A. Smith, whose services were allowed him by the Psychical Research Society. These experiments were made "with a purely therapeutic object, and in no way for the purpose of elucidating physiological problems." Before giving our readers the conclusion these gentlemen came to, let us quote one paragraph of this article, with which we feel strongly in accord: "There appears to be another argument against indiscriminate hypnotizing of the insane,

and that is the danger of starting in the patient's mind the idea that he or she has been 'mesmerized,' and made worse thereby. The frequency with which patients believe they have been 'mesmerized' when no such experiments have been made is already well recognized."

The number of cases for which hypnotism was used was *twenty-one*, and they are summed up as follows:—

"The operation was attended with very little success as far as the production of the hypnotic state was concerned, and the same remark applies to any therapeutic good to the patients. The patients who appeared to derive some benefit were cases very similar in symptoms; in all these refusal of food being the greatest difficulty to combat, and certainly they improved in this respect after the attempts at hypnotizing, but the results gained would appear to have been due much more to the large amount of personal attention devoted to each case than to any hypnotic influence."

In spite of the comparative failure of these experiments it would not be wise to throw cold water upon any attempt to make hypnotism a therapeutic agent in cases of mental diseases, and it is to be hoped that further experiments may be made in some of the large asylums, not so much with any idea that hypnotism is going to *cure* cases of insanity as with the hope that it may be the means of ameliorating some of the symptoms in certain cases.

Medicines.—We still use **Hyoscine**, and are still satisfied of the good effects in many cases. During the past six months we have given it for cases of great excitement and consequent sleeplessness, with **Chloral**, and find this combination answer, when either of these drugs alone had no appreciable effect.

Sulphonal we have tried in a few cases, but see no reason to alter our opinion of this drug. With us it certainly has caused digestive disturbances, and diarrhœa has been a very common symptom after the administration. Dr. Schmidt, of the University of Würzburg, says sulphonal has a direct influence on the sudorific centre of the medulla oblongata, and thinks that it produces vertigo and ataxy. He also says that great care should be exercised in the administration in cases of heart disease where compensation is deficient.

Synopsis.—(Vol. 1889, p. 300.) **Galvanism, Amylene Hydrate**, grammes ij to v; **Sulphonal**, ij grammes; **Paraldehyde, Hyoscine Hydrobromate**, ♏iv of ½% solution twice or thrice daily, and increased if necessary, and may be combined with **Sp. Ammon. Aromat.** if circulation be slow and feeble. **Hyoscine Hydrochlorate**, gr. $\frac{1}{75}$ hypodermically. Wet packing is useful therapeutically, and as a means of restraint.

(Vol. 1890, p. 325.) In cases due to alcohol, the abuse of morphia, chloral, etc.; or in partial dementia of middle life in gouty subjects; or in cases of melancholia with dry skin and congested liver; or in puerperal insanity, the

Turkish Bath is valuable, and is palliative in epileptic insanity, general paralysis of the insane and many chronic cases. Hyoscine is the most satisfactory sedative; Sulphonal is not very reliable.

INSOLATION.

Synopsis.—(Vol. 1890, p. 328.) Keep thermometer in rectum all through treatment as test of proper time to use Antipyretics, etc.; and high temperature must not be reduced too quickly lest temperature go to subnormal; keep patient quiet, and if heart is weak, neither body nor head should be raised on any account; if spasm occurs, introduce Mouth Gag to keep open the lips.

INSOMNIA. (See also page 3.)

Synopsis.—(Vol. 1889, p. 68, 69.) Caffeine, small doses when insomnia is caused by thoughts and ideas crowding the mind. Strychnine in small doses when insomnia is due to over work, mental or physical. Sulphonal grs. xv to xxx. (Page 307.) Boldo-glucine, grs. xxij to ʒij; Methylal, ʒiss to ʒj; Sulphonal, grs. xv to xlv; Amylene Hydrate, grs xx to ʒj; Somniferin, in doses rather less than Morphine; Antipyrin, Amorphous Hyoscyamine, grs. $\frac{1}{60}$ to $\frac{1}{30}$, or more; Hydrochlorate of Hyoscine, gr. $\frac{1}{250}$ to $\frac{1}{100}$; Strychnia for insomnia of over work. Quinine, kneading abdomen, and application of hot wet compresses in malarial insomnia.

(Vol. 1890, p. 329.) Sulphonal is useful but not certain; Chloralamid, gr. 15 to 60 (average 45 grains) by mouth or enema in nervous insomnia; Muriate of Hyoscine, gr. $\frac{1}{120}$ to $\frac{1}{64}$, subcutaneously, and increased after a time, is better than sulphonal where much motion and excitement exists, and has proved palliative in paralysis agitans and multiple sclerosis; Paraldehyde, ʒj dose, repeating it in about three hours. ℞ Paraldehyde, Mucil. Acaciæ āā ʒj, Aq. ad ʒij, M. Urethan is not very trustworthy; Uralium is said to induce sleep more quickly than any other drug in animals.

INTERMITTENT FEVER.

Synopsis.—(Vol. 1889, p. 61.) Tincture of Phyllanthus Niruri, ʒij in morning in inveterate attacks with infarctus of spleen and liver.

INTESTINAL OBSTRUCTION. (See "Intestinal Surgery.")

Synopsis—(Vol. 1889, p. 310.) Opium, Inflation or Enemata in acute intussusception. Rest, Belladonna, Enemata, and Morphia subcutaneously in chronic cases; Peptonised Enemata and Nutrient Suppositories if vomiting is persistent. Sucking of ice will relieve patient. Metallic Mercury. 7000 to 4500 grs. as purgative in fæcal accumulation; Faradism for paresis of bowel; Massage of abdomen; Inflation by Air, Carbonic Acid Gas or Hydrogen.

INTESTINAL SURGERY. *A. W. Mayo Robson, F.R.C.S.*

Although during the past year a number of valuable communications have been made in the various branches of Intestinal Surgery, the advance has been chiefly in the direction of perfecting details rather than in the advancement of anything new.

In the "Philadelphia Medical News," for November 30th, 1889, are two papers by Dr. Senn, on "Volvulus," which are well worthy of careful perusal.

The most important symptoms and signs on which a probable or positive diagnosis of volvulus can be based are the following: (1,)

Suddeness of attack; (2,) Localized area of tympanites; (3,) Absolute obstruction; (4,) Permeability of the intestinal canal to rectal insufflation of hydrogen gas, as far as the seat of obstruction.

With regard to the surgical treatment, etc., the following conclusions are given: (*a*,) The predisposing causes of volvulus are either congenital or acquired, and consist in elongation of certain segments of the intestine, abnormal length of mesentery, and adhesions; (*b*,) Irregular distribution of intestinal contents and violent peristalsis are the most important exciting causes; (*c*,) Volvulus is most frequently met at the sigmoid flexure and the lower portion of the ileum; (*d*,) Secondary volvulus on the proximal side of other forms of intestinal obstruction is not a rare occurrence; it is also frequently developed during an attack of peritonitis; (*e*,) As a rule, the symptoms are more acute and intense if the volvulus is located above the ileo-cæcal region; (*f*,) Vomiting in cases of volvulus of the sigmoid flexure is not a constant symptom; (*g*,) The most important physical sign of volvulus is a circumscribed area of tympanites which corresponds to the location of the volvulus, but this sign is only of value before general tympanites has set in, and, therefore, enables the surgeon in many cases to make an early and positive diagnosis; (*h*,) All cases of volvulus should be treated by laparotomy if reposition cannot be accomplished by rectal insufflation of hydrogen gas; (*i*,) Reposition should not be attempted without evisceration; (*j*,) Evacuation of intestinal contents by a free incision should be practised in every case where general distension of the intestines is present; (*k*,) Enterectomy becomes necessary if any considerable portion of the intestinal wall has become gangrenous; (*l*,) Irreducible volvulus should be treated by establishing intestinal anastomosis, with permanent exclusion of the seat of obstruction from the active fæcal circulation; (*m*,) Recurrence of volvulus can and should be guarded against by shortening the mesentery by folding it upon itself parallel to the long axis of the bowel and suturing the apex of the fold to the root of the mesentery.

We pointed out in last year's article on colotomy the manifest advantages attending the employment of inguinal instead of lumbar colotomy, and we still hold the same opinion after a more extended experience, but lumbar colotomy finds a strong advocate in Mr. Bryant, who gives the result of his experience of the operation in one hundred and seventy cases, in the Bradshawe Lecture published in the "Lancet" for December 14, 1889.

Lumbar Colotomy for Cancer. (See also "Colotomy.")—The results are as follows:—One hundred urgent cases, of which fifty-five

were successful; Forty-five died within the month (too late cases); Eighteen died within twelve months; Nineteen lived between one and two years; Twelve lived between two and three years; Six are now alive, three between two and a half and five years after operation, one, six years.

Seventy not urgent cases:—Not one died within the month; Eighteen, or 15 per cent. died within twelve months; Twenty-four, or 34 per cent. lived between one and two years; Sixteen, or 22 per cent. lived between two and three years; Twelve, or 17 per cent. are now alive, and eight of these from two to six years after the operation; 38 per cent. of the whole number have survived the operation from two to six years.

In at least three-fourths of the patients who convalesced from the operation and experienced its benefits the artificial anus was a success—that is, that the whole of the fæces were discharged through it, and the local disease was left unirritated by the passage of fæcal matter. In the remaining fourth this desirable result was not secured, and fæces at times—particularly when they were liquid—passed downwards, and added to the local irritation of the obstructing disease. Relief was, however, afforded to all these patients by the use of cleansing enemata, injected sometimes from the rectum below and sometimes from the artifical anus above, and the subsequent introduction of a sedative suppository through either anus.

We have usually found a pad of wool and a truss to be sufficient for retaining the fæces after the operation of inguinal colotomy, but Mr. Cripps Lawrence has invented a plug and dilator, which from the diagrams published in the "Lancet," April 12th, 1890, would seem to be well adapted for closing the artifical anus and at the same time maintaining the patency of the opening.

Dr. Kelsey in the "New York Medical Record" for October 12th, 1889, suggests an improvement in the technique of inguinal colotomy, by keeping the bowel in position by means of a hare-lip pin which passes through the skin and parietal peritoneum on each side and through the meso-colon in the centre.

Mr. Rivington has employed Barnes' bag successfully in the treatment of two cases of intussusception. The first patient was a man. The intussusception of limited extent could be felt from the rectum. Upon the introduction and inflation of the bag the tumour readily receded and soon disappeared, not to return. The second patient was a child with two weeks' history of intestinal trouble. The ileo-cæcal valve formed the apex of the prolapsed and invaginated intestine. Insufflation and injection of fluid failed in reduction and a

Barnes' bag was introduced simply for the purpose of retaining the mass, it being removed twice a day to allow the escape of liquid fæces. At the end of two days the intussusception had entirely disappeared. It would seem therefore, that this may be a valuable adjunct to other methods of treatment in intussusception that readily recurs on replacement, or that does not disappear entirely under the use of injections of air or liquid.

In the "Lancet," for May 3rd, 1890, is the description of a case of intussusception of nine days' duration, successfully treated by inflation of air, by means of an ordinary pair of bellows, under an anæsthetic.

The writer has also had a case this year, of intussusception in a child, five years of age, where the intussusception was successfully replaced by inflation with air by means of a Higginson's syringe.

An interesting discussion on the operative treatment of acute intestinal obstruction, took place at the meeting of the British Medical Association in Birmingham, the discussion being opened by Mr. Greig Smith and taken part in by Messrs. Mayo Robson, Kendal Franks, Bennett May, Spanton, F. Marsh, and Butlin.

The speakers agreed in the conclusions that the operation should be varied according to the condition of the patient and the state of the gastro-intestinal tract.

The opener of the discussion divided the cases clinically into three classes, according to the gravity of the condition, and detailed the operative procedures for each : (1,) *The comparatively favourable :* In these, complete operation was proper, as the intestines were capable of self-recovery. After an inspection of the bowel and, if possible, relieving strangulation, it was neeessary in many cases to empty the distended portion by a small incision and the insertion of a tube, allowing the contents to drain away gradually, otherwise obstruction continued owing to the paralysis of the over-distended bowel ; (2,) *The unfavourable :* Complete operation was proper if not prolonged, and intestinal evacuation or drainage essential. The propriety of anæsthesia if the stomach was distended was doubtful, and artificial emesis with the stomach-tube was sometimes advisable. Intestinal percussion and auscultation were valuable as guiding to the seat of obstruction, and perhaps modifying the site of incision. The danger of extensive exploration, if the obstructing cause was not readily found, and the necessity of relieving excessive intestinal distension by intestinal evacuation and drainage were pointed out. Anæsthesia might in most cases be stopped when the parietal incision had been made ; (3,) *The almost hopeless :* Complete operation was improper and general anæsthesia forbidden, intestinal drainage by rapid and

simple operation giving the only chance of life. Local anæsthesia, momentary exploration with the forefinger, and the performance of enterostomy were required, the subsequent treatment being dependent on the progress of the case. In all cases it should be remembered that a complete operation might result in the death of a patient who might be saved by operation in successive stages. As a general principle the speaker urged the importance of early operation, and deplored the resort to opium as tending to mask symptoms, to cause paralysis of the bowel, and to give a deceptive appearance of relief which delayed surgical treatment till too late for success.

In the "Deut. Med. Woch.," Nov. 7th, 1889 is a valuable paper by Czerny on resection of the bowel. He operated six times for malignant tumours, four patients recovering; five times for tubercular ulceration, three patients recovering; four times for intussusception, with one death; and six times for fæcal fistula with five recoveries. Except in one case of tubercular fistula, the bowel wound always healed by first intention. In all cases two rows of silk sutures were employed and the stitched bowel dropped into the abdominal cavity. Drainage was always avoided. Czerny considers that what is now required, is more the perfecting of individual skill than the inventing of new methods.

Dr. W. Sachs, in the "Central. f. Chir.," Oct. 4, 1890, describes a modification of Senn's method of forming lateral anastomosis by bone plates. He proposes the use of an appliance resembling in form a sleeve stud perforated in the middle. This is made up of two bone plates fixed together, yet separated to a small extent from each other as far as the uniting portion immediately around the central perforation. The following advantages are claimed for this method: (1,) The interior of the intestine is not exposed for so long a time as it is in Senn's operation; (2,) The margins of the intestinal wound rest in the deep annular groove between the joined discs, and are thus protected against infection and the results of pressure; (3,) There is no risk of the cut edges adhering together; (4.) It is unnecessary to pass any suture through the whole thickness of the intestinal wall.

REFERENCES.—"Lancet," February 22, 1890; Ibid., October 11, 1890; Ibid., March 22, 1890; "Therap. Gaz.," August 15, 1889; "Med. Press and Circular," August 14, 1889; "Lancet," April 12, 1890; Ibid., March 22, 1890; "Brit. Med. Jour.," January 18, 1890; "Archives of Surgery," January and July, 1890; "Med. Chron.," March, 1890; "Dublin Med. Jour.," August, 1890; Kocher, "Correspond. of Schweizer Ærzte," No. 7, 1890, pps. 201-208; "Lancet," Feb. 8, 1890.

IRITIS SEROUS.

Synopsis.—(Vol 1889, p. 319.) Injections of **Calomel** mx of 0·4% solution in **Glycerine** injected into temple for syphilitic iritis.

(Vol. 1890, p. 335.) **Colchicine**, gr. $\frac{1}{50}$ to $\frac{1}{16}$ a day, and if this fails inject **Pilocarpine**.

JAUNDICE.

Synopsis.—(Vol. 1889, p. 61.) **Phyllanthus Niruri Tincture**, ʒij, used by Hindoo physicians as deobstruent.

JOINTS (The Treatment of Tubercular Disease of).

W. J. Penny, F.R.C.S.

This has formed the subject of two interesting contributions to the "Lancet," by Mr. John Croft, of St. Thomas's Hospital, and Mr. Howard Marsh, of St. Bartholomew's.

Mr. Croft, after referring to former methods of surgical treatment of the hip joint, which he describes as deplorable, goes on to say: Eighteen years ago the differentiation between what was then called scrofula and bacillary tuberculosis had not been established. Men's minds, except in a few remarkably advanced instances, were in doubt and confusion. After Koch in 1882 showed how bacilli were always to be found in "tubercle," opinions with regard to scrofulous and tuberculous diseases took more definite shape, and with this knowledge a more definite line has been taken in the surgical treatment of joint diseases. At the present period the surgical party may be said to be pursuing two opposite lines of policy. One section has laid down a formulated policy of attempting complete removal or excision, founded on the certain knowledge of the presence and habits of an inoculable growth. Another section follows a contrary line of policy, that of treating the same disease without excision or similar radical operation, and in these modern days explains the old practice by recently acquired knowledge. Is the first mentioned section right, and the second one wrong; or is the second section right and the radical party wrong; or are both more or less right? The facts on which the operationist party base their policy are something like these: that when tubercular disease commences in joint structures it follows the same course that it does in other structures of the body; that it may cease to develop, and then may undergo spontaneous cure; that it may develop and undergo caseous degeneration, and the caseous products may liquefy and give rise to abscess; that the local condition may be followed by infection of other parts of the body; that the tubercular element is artificially inoculable, and is auto-inoculable, and this latter kind of infection may suddenly take place upon a long period of local quiescence. The line of action which has been

taken on this basis of facts has been in the direction of what has been called early excision, and the latest development of this prompt action has thus been formulated by Mr. A. Barker: "That in cases where general tubercular disease does not contraindicate it, the infected tissue of a joint should be thoroughly removed so soon as it is suspected that caseation is advancing in it." When other treatment has failed to arrest the disease of the joint, and there are signs that caseation has commenced and is advancing, then the operation of excision should be performed. The operation should go wide of the disease and proceed with as little violence as possible, and with the object of obtaining primary union or union by first intention. This has been obtained by several surgeons, which satisfactory result Mr. Croft refers primarily to the introduction of antiseptics and the discovery of bacillus tuberculosis.

Now, what are the facts upon which the anti-excisionists, as represented by Mr. Howard Marsh, base their policy and practice? At the present time this section of the surgical party admits that the disease which used to be called scrofulous is tubercular in its character, and it recognizes the parasitic nature of tubercle. So far the basal facts are the same. From clinical observation of the progress of joint disease and of the results of non-operative treatment in the past, and by comparing the progress and results with the achievements of the excision party a verdict is deduced against the excisionists. First, with reference to the progress of tubercular disease from clinical observation of it. It is alleged that the tubercular condition is a transitory one. That the condition of a patient favourable to the development and growth of the tubercular element is a transitory one. If the patient is brought into a condition unfavourable to the growth of tubercle, a cure may result with a movable joint, providing the treatment has been commenced sufficiently early.

It is maintained that the bacillus tuberculosis is dependent for its vitality and maintenance upon conditions and influences which are either in their nature transitory or such as can be counteracted or removed, and when these conditions are no longer present the bacillus perishes, and the tubercular process comes to an end. The tubercle and its products become a mere "corpus mortuum," and either is gradually removed by disintegration and absorption, or gives rise to an abscess, "and is clean swept away." Further, it is maintained that the risk of general infection is so small that it cannot be regarded as affording any substantial support to early excision. This opinion is based upon some statistics drawn from reports on cases of excision and from statistics derived from the Hospital for Hip-joint Disease.

Mr. Croft then goes on to discuss seriatim the objections that are raised against excision under the following heads: Mortality; necrosis; shortening; duration of illness; risk of and precipitation of general infection; incomplete ablation of disease; transitory character of tubercular tendency.

The *Mortality* of cases treated at the Hospital for Hip-joint Disease from 1867 to the end of 1879 was 30·4 per cent. The same report gives a mortality after excision of the hip of 35·5 per cent. Of cases treated since 1880 by means short of excision, Mr. Marsh finds a mortality of 10 per cent. Mr. Croft gives statistics of his cases treated by excision since 1879, and finds a mortality of 13·6 per cent. He does not quite concur with Mr. Marsh's figures from the fact that a large proportion of his cases could not be traced.

Necrosis.—The Committee of the Clinical Society on Hip-joint Disease found that necrosis existed in 60 per cent. of the specimens examined. Mr. Croft remarks that reference to any museum or to cases operated on will yield instances of large and small sequestra so blocked in as to require measures to remove them. I cannot admit that necrosis is infrequent, or that sequestra are always so friable and soft as to readily disintegrate and be discharged. I have always maintained that the possibility of the occurrence of necrosis is a reason for excision, and I remain of the same opinion.

Shortening.—Mr. Croft is of opinion that improved methods of operating tend to lessen the amount of shortening after excision, and as regards the duration of illness and suffering, he claims an advantage of about two years in favour of the excisionist party.

Risk of General Infection and Risk of Precipitation of General Infection.—This risk does not belong exclusively to the excisionist side, though it must be admitted that the risk has been less on the side of those who advocate treatment without operation. The latter party make use of the risk referred to as a reason for avoiding operations. On the other hand, the modern excisionist uses the reason on behalf of early excision. He advocates the performance of the operation at a stage before the risky period has arrived. The modern excisionist deprecates operations in advanced cases, and advises it so soon as caseation has commenced and is advancing. He recognizes the risk, and he does his best to avoid it by: (1,) Operating early; (2,) By cutting wide of the diseased tissues; and (3,) By obtaining union of the cut surfaces by first intention. The surgeon is advised by excisionists against an attempt to extirpate a disease which is already wide-spread and advanced. A complete removal of the diseased tissues is insisted upon, and precautions have been urged against incomplete operations.

On the transitory character of the tubercular tendency there is no room for dispute. It is put forward as an inducement to abstain from operating and as a reason for attempting to cure hip-joint disease of the tubercular kind by other means than the knife. The excisionist thinks that a child belonging to poor parents in densely thronged cities, when he has arrived at a certain age of tubercular joint disease, should be relieved as quickly and completely as possible. It is thought that the time has come when the risk of the disease proving of the opposite to a transitory one should be promptly met, and, at the same time, that the sufferings of the child should be cut short, and that the duration of illness should be abridged as much as possible, and I look upon that as a sound reason.

Mr. Croft having referred to the policy and practice of the two extreme sections into which the surgical camp has been divided on this subject, calls attention to a third section. This section has sprung into existence during the last seven or eight years. It is a subdivision of the operationist section. They who belong to it call themselves the arthrectomists or erasionists. They hold the same opinions as the excisionists, but the operation advised by them differs not in theory, but in degree. One objection to excision as practised on joints generally up to 1880, and already referred to, was the mutilation and shortening which followed on the operation. In order to avoid this condition of the limb the operation of erasion or scraping is employed. The tubercular or diseased synovial membrane is scraped and dissected away, the diseased bone is similarly treated, and the procedure is only deemed complete when all diseased tissues have been removed. In this way the removal of the disease may occasionally be accomplished without the loss of any bone. After such an operation a movable joint, and a limb free from shortening, may under favourable conditions be obtained. In the event of bone being diseased the results of the operation are not likely to be so successful; yet, providing all tubercular bone has been removed, the result may be better than after an excision which touched or included the epiphyses themselves. The fault or shortcoming of the erasionists lies in this, tubercular disease situated at the epiphysial lines may escape them. Growth and development of tubercle in this situation are not by any means rare; indeed, I believe them to be more common than anti-excisionists and many other surgeons are aware of. I speak from the results of examinations of many specimens by myself and others. For patients suffering from tubercular disease limited to synovial membrane, erasion is admirably well adapted, as it meets all the requirements of the case when performed early. In advanced cases and in

cases of more widespread disease a more radical treatment is called for. In instances of intermediate character and degree excellent results seem to have been obtained by complete erasion, but this does not apply to disease of the hip-joint. Meantime, to my mind, it offers better prospects for saving life, preserving useful joints, diminishing shortening, and cutting short the duration of illness and suffering than either the policy and practice of the anti-excisionists, or the practice of that section from which it has emanated. Erasion has not been considered hitherto to be applicable to tubercular disease in the hip-joint. In conclusion, Mr. Croft says of the present state of surgery of joint for tubercular disease, that it is taking the opposite of retrograde steps, that it is advancing on safe lines, and that there is a great future for the policy which has laid down that tubercular disease in its caseating and liquefying stage should be completely excised, and for the practice which provides an operation that shall effect this object in such a manner as to save the duration of suffering and illness, and yet preserve a useful joint and non-mutilated limb.

Mr. Howard Marsh, on the other hand, says, "I will venture to assert, notwithstanding Mr. Croft's incredulity, that when rest is maintained, and abscesses, as soon as they are detected, are opened antiseptically, in not more than 5 per cent. of the cases will it be necessary to operate for the removal of sequestra."

As regards shortening, Mr. Marsh considers the figures at present at our disposal indicate much the same amount in excision and non-excision cases. As to duration of illness, while recognizing the excellence of the results of those cases in which primary union was obtained, he maintains that we have yet to learn how useful a limb may be obtained, and how long it is before patients can dispense with supports and move about freely without the occurrence of deformity. As regards the question of general infection, Mr. Marsh is of opinion that the danger has been greatly exaggerated. The report of the Clinical Society states that in two hundred and sixty suppurating cases there had only been sixteen deaths from tubercular meningitis and eight from phthisis, or phthisis and dropsy. In children he looks on tubercular meningitis as synonymous with general tuberculosis. He is inclined to negative the view that by early excision all tubercular material can be removed, so that none remains to constitute a further source of infection. He asks, how can we be certain that all infected synovial membrane has been removed? And referring to the frequent deposition of tubercle in the epiphysial lines points out the two horns of a dilemma which the surgeon may have to encounter. If he removes the whole disease by excision he may sacrifice the epiphysis,

and thus permanently shorten the limb, and if he saves the epiphysis he may leave some disease behind.

He also alludes to the possibility of the deposition of tubercle in the neighbouring glands, or in the glands of the posterior mediastinum.

Mr. Barker has pointed out that in no less than 10 per cent. of the total number of deaths following excision general tuberculosis supervened in such a way as to suggest strongly, if not to prove, that the surgical interference was the exciting cause of the generalization of the disease.

Referring to arthrectomy Mr. Marsh says that so far the operation had not made a favourable impression on him, and he anticipates that as the surgery of the joints advances arthrectomy and excision will alike fall more and more into disuse.

He calls attention to a fact which deserves to be especially noticed in regard to the employment of excision in the treatment of tuberculosis of the joints. This is that in the well-to-do the operation is almost unknown, although tuberculosis is certainly by no means rare. Such a fact clearly shows that means exist by which the operation can be avoided ; that in other words the operation is not essential. But it shows also that those in whom excision could be performed under the most favourable conditions are those who next to never avail themselves of the advantages which it has, in the view of its advocates, to offer. At the present day the well-to-do freely accept the advances which surgery has lately made. When ovarian disease is present they submit to ovariotomy, for there is no alternative, and, besides, they know that they can trust the remedy that is offered to them. In the same way they submit to lithotrity, colotomy, the removal of tumours, and many other grave operations. But as to excision they and their advisers almost invariably reject it, for they learn, first, that the results are unsatisfactory, and, secondly, that there are alternative and more promising means to be adopted. Of course it may be urged that the rich are enabled by their resources to avoid methods of treatment which are the best that can be employed for poor patients. There are many cases in which this is true. But this is not the ground on which excision is at present advocated. Excision is now advocated upon grounds many of which are either purely pathological or purely surgical : that tuberculosis should be regarded in the light of a malignant disease, and treated accordingly ; that the limb secured by excision is only a trifle shorter than that which is left after cure without operation ; that sequestra are present which require removal, etc. Such grounds as these apply equally in the case of the well-to-do as in the case of the poor, and the first of them would render it imperative to excise every

local development of tubercle, wherever it could be got at, and as soon as caseation was suspected, in the rich as well as in the poor. To such a point, indeed, have the arguments in favour of excision been carried by some of its advocates that the possibility of curing tubercular joint disease by means short of operation is almost entirely ignored.

Treatment by Parenchymatous Injections of Iodoform Oil.—Prof. Trendelenburg, toward the end of last year was led by a communication of Dr. Heusner to try iodoform injections in several cases of tuberculous bone and joint disease, and his results were so satisfactory that he has since then employed the same method in a large number of cases. A 5 per cent. ethereal solution of iodoform was used at first, but as it gave rise to great pain and sometimes to sloughing, iodoform oil, 5 to 25 per cent. was substituted. It should be freshly prepared just before using ; 30 to 50 minims are injected every eight days into the diseased tissues, after careful disinfection of the skin. If abscesses have already formed, they are first emptied and then injected. If fistulæ are present, it is found that injection into the fistulæ themselves are less effective than when they are made into the surrounding tissues. A sublimate dressing is applied after each injection. In injecting into fungous masses and into the tissues around fistulæ, considerable force must be used, which, however, seems to diffuse the iodoform the more widely. In some cases beneficial effects of the injections are observed after three or four treatments, in others not until many more have been employed. Pain usually disappears early. In favourable cases the swelling disappears, the abscesses diminish in size and number. The fistulæ are obstinate, and entire healing occurs in them only after long treatment. Movement in diseased joints is partly re-established. In other cases a less degree of improvement is obtained, and in others operation becomes necessary, but even these seem benefited by this preparatory treatment. There were no cases of iodoform poisoning. It seems wise to sterilize the oil used. Control experiments with Peruvian balsam show the superiority of the iodoform oil. Of one hundred and nine cases treated in this way twenty-eight required other operative interference ; thirty-six seemed to be cured ; thirty-seven were improved ; twelve were not cured ; twenty-four are still under treatment, of whom fourteen show considerable improvement.

The Question of Erasion as against Resection of Joints in Tuberculous Affections is at present much discussed in the surgical world. A recent debate on the subject in the surgical section of the Royal Academy of Medicine in Ireland revealed a considerable divergence of opinion on the matter among experienced surgeons. Dr. Eulogio Cervera y Ruiz, director of the Encinas Institute at Madrid, has recently made a

contribution to the controversy, a brief abstract of which may be of some interest. He relates four cases, three of children and one of a young adult, in which he performed erasion of the knee-joint with gratifying success. He begins by stating that in his experience tubercular disease of joints, especially of the knee, has its starting-point in the synovial membrane much oftener than is generally supposed. To the objection that erasion may leave a tubercular focus in the substance of the epiphysis, he replies that the same thing may happen in resection. To guard against this danger, he in all cases, after having removed the synovial membrane, thrusts a strong slender drill into the substance of the epiphyses in different directions; the greater or less resistance which the instrument meets with in its passage through the bony tissue enables him to judge whether there is a tubercular focus or not. If no softened point is discovered nothing further is done, and the exploration does no harm, but if there seems to be any ground for suspicion as to the condition of the bone, resection is performed. Except in the first of these cases, Dr. Cervera y Ruiz opened the joint by a transverse incision, sawing through the patella, the two parts of which were afterwards brought together with sutures. The Spanish surgeon, while removing the synovial membrane in its entirety, a proceeding which requires great patience, spares the ligaments when they are not actually diseased; this, in his opinion, contributes powerfully to the usefulness of the limb, whether the joint becomes ankylosed or not. Dr. Cervera y Ruiz, whilst advising that such affections should at first be treated by milder measures, emphasizes the necessity of not losing too much time in this way; if a notable improvement is not observed in a few months recourse should be had to arthrectomy.

Mr. Watson Cheyne, in his lectures delivered at the College of Surgeons in 1890, expresses the view, as the result of his investigations, that tuberculous tissue is found in those diseases which up till recently had been clinically known as strumous, and therefore strumous diseases of bones and joints are tubercular. Tuberculosis is an infective disease, due to the growth in the tissues of a parasitic micro-organism, the tubercle bacillus, and this produces a special form of tissue. This tuberculous tissue may present the form of nodules, or a more diffuse infiltration, the characteristic cellular elements of this tissue being epitheloid cells. This tissue has a great tendency to undergo caseation, to excite and keep up a condition of inflammation in the tissues around, and to lead to fresh developments of nodules in the immediate vicinity, and also in distant parts. It is only by taking into consideration the histological characteristics of the tissue, the tendency to caseation, the presence of bacilli, the multiplicity of the nodules, etc., that

we can come to a certain conclusion as to the tubercular nature of a tissue.

REFERENCES.—"Lectures at the Royal College of Surgeons," 1888; "Amer. Jour.," January, 1890; "Lancet," February 8, 1890; Ibid., July 26, 1890; "London Med. Rec.," December 20, 1889; "Amer. Jour.," January, 1890.

KELOID.

Synopsis.—(Vol. 1889, p. 319.) Removal by **Electrolysis**; continued pressure, *e.g.*, by **Elastic bandage.**

KERATOSIS PILARIS (Lichen Pilaris).

Synopsis.—(Vol. 1889, p. 319.) **Alkaline Baths** followed by inunctions.

KIDNEY (Surgery of). *E. Hurry Fenwick, F.R.C.S.*

Considerable impetus has been latterly given to the progress of renal surgery by the publication of the records of many successful nephrectomies and nephrolithotomies.

Much sound knowledge of the technique, and value of the various procedures was placed before the profession at the Leeds Meeting of the British Medical Association in 1889. Much has since been added. It will therefore be profitable to glance briefly at the present surgical position of the subject, and in doing so it will be more convenient to divide the *resumé* under the headings of (1,) Puncture; (2,) Fixation; (3,) Incision; and (4.) Excision of the Kidney. Moreover it will be wiser, merely to reflect rather than to attempt to reconcile the divergent opinions concerning the indications for the employment of these several operations.

I.—PUNCTURE OR ASPIRATION OF THE KIDNEY.

Mr. Thornton would restrict the use of puncture as follows: (1,) To decide in doubtful cases between solid and fluid tumours of the kidney; (2,) To relieve painful distension when nephrotomy for some special reason is not at once advisable or possible; (3,) To remove urine, or serum, or pus from a very large tumour, to reduce its bulk during the performance of nephrectomy; (4,) As a tentative attempt at cure in some cases of simple cyst or hydronephrosis, though the chance of cure is, he thinks, very slight; (5,) To localize the position of renal or circumrenal abscess, when the physical signs are not clear enough for free incision. In such cases puncture is to be immediately followed by free incision when the pus is found; (6,) To gain time, and relieve the harmful tension in some cases of calculous suppression.

Where should the Trocar or Aspirator be entered? Percussion is the safe guide, but the needle should generally be introduced far back in the loin to avoid the risk of puncturing the colon or peritoneum.

Mr. Henry Morris advises that if there be any spot over the swelling which is thin, soft, prominent or fluctuating, the trocar should be inserted there. Certain precautions have to be observed. The skin round the proposed site of puncture, the trocar and cannula, must be carefully purified by a watery solution of corrosive sublimate. In withdrawing the instrument, it is of the highest importance to bring with it all the fluid it contains and not to permit any leakage into the tissues through which the cannula passes after leaving the kidney. A grooved needle should never be used. Mr. Thornton quotes the case of a young lady suffering from tubercular kidney who never suffered any pain until the kidney was punctured and the disease thus diffused through the perinephric tissues, and for this reason the same surgeon does not believe puncture is justifiable in pyonephrosis. He deprecates its use in hydatid disease, as it is impossible to thoroughly evacuate the daughter cysts and membranes, and experience has shown that suppuration is frequently induced by puncture.

At first there was some considerable difference of opinion as to the advisability of repeated aspirations for hydronephrosis when large enough to form an abdominal tumour, but it is now generally allowed that nephrectomy without preliminary operative treatment is the better surgery.

Needling is a form of exploratory puncture which finds favour with some surgeons to verify the presence of stone in the kidney. It consists in introducing a needle into the kidney from the loin. It is not devoid of danger, for the kidney may be transfixed and the bowel or peritonæum pierced, or the large vessels wounded, and the needle may have to be introduced many times before the stone is struck. Needling the *exposed* kidney will be referred to under the heading of Nephrolithotomy.

II.—Fixation of the Kidney (Nephrorrhaphy, Nephropexy).

A distinction is drawn between a kidney *movable* in, or with its capsule behind the peritonæum, and one *floating* free in the peritoneal cavity attached by a mesonephron. Dr. Drummond in recording thirty-one cases of *movable* kidney, says the most characteristic symptom was pain of an aching, dragging and burning character, aggravated by exertion and relieved by rest. The hypochondrium was the region most frequently affected, though the pain was often described as travelling back into the posterior lumbar region, and again, up to the shoulder-blade or down towards the ovary. Not unfrequently it passed across the lower part of the epigastric region from side to side. Dyspeptic symptoms were frequently prominent in ten of the cases. As a rule there was a sense of local or general abdominal tenderness,

with more or less gaseous distension, pain, constipation, and loss of appetite. The pain and general dyspeptic discomfort were at their height usually from one to three or four hours after food.

Dr. McCoosh relates two cases to show how often the symptoms resemble those caused by disease of the uterus or its appendages. In one the ovaries and tubes had been removed, in another an anteflexion of the uterus had been remedied by divulsion and a stem pessary. Neither patient had been benefited by these operations. Each possessed a movable kidney. A complete cure was accomplished in the one case by a bandage, and in the other by a nephrorrhaphy.

When the suffering is severe enough to warrant operative interference, and a well-fitting renal truss does not restrain the excursions of the kidney or afford relief, then an attempt should be made to fix the kidney in its proper position. Opinions are still at variance about the propriety of the operation. It is endorsed by many: Morris, Thornton Guyon, Küster, Langenbuch, Weir, Bruce Clarke, Keen, and others. The mortality is 2 per cent. (McCoosh). On the other hand Mr. Lawson Tait says, "I have been persuaded to perform three of these useless and unscientific operations with the result that not one of the patients have been benefited in the least, and one of them has died under such circumstances, that I think the operation might be fairly blamed for it. I shall have nothing more to do with fixing kidneys." Most agree that Nephrectomy (for movable kidney), with its 25 per cent. mortality is unjustifiable.

How is Nephrorrhaphy performed? After free exposure of the kidney the sutures are passed directly through the parenchyma. Kangaroo tendon is used by Mr. Morris, who describes the operation thus: Three kangaroo tendons are passed through the posterior surface of the kidney, one nearer the upper the other nearer the lower end, and the third midway between the other two but nearer the hilum. Each suture is buried for a length of three-quarters of an inch within the renal substance, and penetrates about half-an-inch into the thickness of the organ. The upper suture passes through the upper edge of the shortened adipose capsule, the transversalis fascia, and the muscles, and is tied to them; the lower suture is similarly passed through and tied to the lower edges of the cut structures, and the intermediate suture is passed through both edges of the divided capsule, fascia, and muscles, and laces all up together.

Dr. Newman prefers chromicised gut, for he has found that sutures passed through the kidney become destroyed more rapidly than elsewhere. The sutures do not tear out unless tied too tightly. They do not cause any permanent damage to the renal structure

(Tuffier). Some surgeons aim at stirring up irritation and subsequent inflammatory adhesions by placing a large rubber drain against the convex margin of the kidney.

Latterly another method of fixing the kidney has been proved to be very successful. Mr. Jordan Lloyd employed it in 1886, Guyon and Tuffier advocate it.

A certain portion of the capsule proper is stripped off the kidney, and the sutures passing through its parenchyma bring the raw surface thus made directly in contact with the cut tissues in the loin. The sutures enter and emerge through the capsule just outside of the raw margin, and are then passed through the tissues on each side of the incision which is closely united.

Results.—Although one hundred and seventeen nephrorrhaphies have been collected by Drs. Lindner, Frank and McCoosh, it is too early as yet to draw any definite conclusions as to the relative proportion of successes and failures. Morris claims seven successes out of ten cases. Frank quotes eleven permanent cures, four improvements and six failures out of twenty-one nephrorrhaphies. Two deaths are recorded in one hundred and seventeen cases, viz., Cecherelli's case in which the kidney was sutured to the twelfth rib and the pleura opened, with the result that fatal pleurisy ensued; and Langenbuch's case in which death took place on the third day from septicæmia, the suture having passed through an old embolic infarct in the kidney.

III.—Incision of the Kidney (Nephrotomy).

Mr. Thornton would restrict the use of nephrotomy (1,) To cases of calculous suppression, in which incision seems preferable to mere puncture, with the chance of being also able to remove the stone; (2,) For the cure, by subsequent drainage, of simple cysts, abscesses, and hydatids. The question of possible cure in some cases of hydronephrosis to be further tested; (3,) For the cure, by subsequent drainage, of traumatic pyonephrosis or pyelitis, and in the early stages of tubercular suppuration; (4,) For the possible cure of more advanced calculous or tubercular suppurations, when the patient will not submit to nephrectomy; (5,) For the performance of nephrolithotomy in some cases, if extended experience shows that this procedure possesses any advantages over the "*combined method*," or when those who have no experience in abdominal surgery are compelled to operate. There is however a difference of opinion as to the employment of nephrotomy and drainage for advanced cases of calculous and tubercular pyonephrosis. Mr. Thornton and others object to it especially when used as a preliminary to nephrectomy, because, without offering any compensatory advantage, it leads to prolonged and exhausting suppuration, to

infection of the loin tissues with the pus from the kidney, and to adhesions and fistulæ, which make a future nephrectomy much more difficult and dangerous. Mr. Thornton says, "The suppuration which frequently follows a nephrotomy in these cases cannot but weaken and injure the patient, and tend to produce amyloid disease in the opposite kidney. The diminution of the size of the vessels, said to occur, is a matter of no consequence in these days of aseptic ligature and forci-pressure. The diminution in the size of the kidney is of equally little consequence, for this can be rapidly produced during nephrectomy by the use of the aspirator. The advantage of the less friability of the kidney and of the tolerance of surrounding parts is dearly bought by the presence of a permanent fistula, and by the replacing of soft and easily divided adhesions by dense cicatricial tissue, not to mention the extensive formation of adhesions in the track of the lumbar operation, which would have had no existence but for that operation. This fistulous track is certain to be putrid after prolonged external suppuration; for if putridity is not present, the sinus is pretty certain to heal; but this cannot happen in the presence of multiple or branched calculi, or of caseous masses in the deep recesses of the kidney. It is quite possible to enucleate a pyonephrosis entire, and without fouling of the wound, before there is a sinus, but quite impossible after there is one."

Mr. Reginald Harrison in an interesting and suggestive article on suppurating kidneys, the result of prostatic and urethral obstructive disease, advocates draining both the kidneys by a perineal opening.

Kidney (Stone in).—Nephrolithotomy.—Early diagnosis and the extraction of the stone from the kidney before suppurative changes have been induced by it, is one of the great elements in the successful treatment of renal calculus (Henry Morris, Newman).

It is, however, a matter of common experience that explorative incisions not infrequently fail in the detection of a calculus, which was presumed from the typical character of the symptoms, to have been present, and that, as Mr. Jacobson says, "Nephrolithotomy is one of those advances in modern surgery in which the operation has outstripped the diagnosis." If, then, our diagnosis needs propping up by digital exploration of the kidney, what is the actual risk of that procedure?

Mr. Lawson Tait records forty-eight cases of nephrolithotomy with one death (2 per cent. mortality), and the general consensus of opinion is in accord with Prof. Keyes of New York, who asserts that the posterior exploratory incision upon a kidney suspected to contain stone is devoid of any serious danger when performed with proper

care; it should be resorted to more often than is at this date sanctioned by general surgical opinion.

What symptoms justify Nephrolithotomy?—Mr. Jacobson sums them up as follows: (1,) *Hæmaturia* (which in rare instances is absent) is recurrent, long-continued, rarely profuse, dependent on exercise. The blood is always intimately mixed with the urine; (2,) *Pain*, (*a*,) fixed lumbar pain of a dull aching character, increased by exercise, and often subject to nocturnal exacerbations due to flatus (Morris) or urine concentration; (*b*,) radiating pain into testes, thigh, calf, and foot; (*c*,) tenderness on deep palpation, and stabbing pain on percussion of kidney (Jordan Lloyd); (3,) Long-continued lithiasis or oxaluria, history of gravel, attacks of renal colic; (4,) Frequency of micturition, relieved by rest in bed, and not experienced at night; (5,) Absence of any condition like tubercular depôts in the prostate, vesiculæ seminales, etc., which will explain the symptoms (H. Morris).

The chief conditions which simulate renal calculus are: (1,) Lithiasis and oxaluria; (2,) Tubercular kidney; (3,) Pyelitis non-tubercular; (4,) Tubercular prostate (Morris); (5,) Movable kidney; (6,) Gall-stones; (7,) Interstitial shrinking nephritis (West, Boulby); (8,) Disease of lumbar spine (Wright).

What are the Incisions for removing Renal Calculi?—(1,) The lumbar incision (nephrotomy), which may be enlarged in various ways, is the path usually adopted; (2,) The "combined" method (Thornton). The abdomen is opened through the linea semilunaris over the suspected kidney; one hand then searches both kidneys and ureters, and having found a stone, it fixes the kidney while the other cuts down upon the stone directly from the loin, merely making an opening through the loin tissues large enough to introduce the finger and the necessary forceps for the extirpation of the stone.

What are the Advantages claimed for the "Combined" Method?—(1,) Certainty of examination of both kidneys and ureters, and the affected side being discovered; (2,) Greater ease and certainty of finding the stone; (3,) Less risk of injury to the colon or peritonæum by the knife, because they are guarded by the hand in the peritonæum; (4,) A small clean cut on to the stone is all the damage inflicted on the loin tissues; there is therefore less risk of (*a*,) extravasation; (*b*,) suppuration; (*c*,) loin hernia.

Stones are found embedded in the kidney in various ways: If they are fixed in the parenchyma towards the surface, the finger tip detects them, though tubercle of the kidney and suppurating foci often mislead by giving rise to the same tactile impressions (H. Morris).

The entire pelvis may be filled by a large branched calculus, which may be embraced so tightly by the kidney as to cause it to be mistaken for a tough kidney. Stones in the pelvis may be free, or fixed in a recess of a calyx. Both sorts are difficult to detect if small.

The general rule laid down is as follows : "If palpation or needling do not detect the stone the pelvis must be examined digitally or with a child's bladder sound. In breaking into the pelvis some prefer entering through the cortex, and assert there is less risk of urinary fistula (there is certainly more profuse hæmorrhage), others cut directly into the pelvis. Mr. Jordan Lloyd recommends that the lowest calyx be opened by a narrow bladed tenotome, and a child's bladder sound inserted into the pelvis : "It should be carried at once to the top of the kidney cavity, a distance of nearly four inches, and the exploration should be carried out systematically from above downwards, the point being rotated in all directions, so as to investigate both tubes and calyces as the instrument is withdrawn." There are some small stones which it is almost impossible to feel with the finger searching the pelvis. Mr. Jordan Lloyd has shown by a series of paraffin casts of fifty renal pelves that our anatomical conceptions of the calyces are erroneous, that they are not dilated pouches which can be easily examined by the finger, but narrow, often long and branched, canals.

Needling the Exposed Kidney.— Acupuncture (contemptuously termed by one authority, "broddling the kidney with a skewer") is not infrequently of value in determining the nature of a hard nodule in the cortex, or in searching the interior of a "soft patch" in the kidney. The needle should be used systematically, entered at the outer border and carried inwards in a direction radiating to the pelvis.

Mr. Bennet May divides the cases according as the stone is embedded. Thus, from an experience of thirteen cases he states that *parenchyma stones* "are mostly of slow growth, of oxalate of lime, circular or pyramidal in shape, not branched, and occur in young males. The stones are difficult to find, but the cases are the most successful—the kidney itself remains healthy even to a late stage. The prominent feature is pain, and pus is usually absent.

Pelvic stones commonly grow more quickly and to a larger size. Pus appears early and is a prominent symptom. The kidney soon undergoes structural change. Stones are easily found, but recovery is apt to be imperfect. If the pelvic stone is small and loose, it may act as a ball valve causing great destruction of kidney from intermittent backward pressure.

Points in the Technique of the Operation.—(1,) Count the ribs. The

last rib may be rudimentary, and the pleura projects a good deal below the lower edge of the eleventh rib ; (2,) Some of the branches of a large calculus easily escape detection ; (3,) A small stone in a pyonephrotic sac is most difficult to seize if it is not caught in the first rush of the collected fluid ; (4,) If the kidney is much disturbed it should be stitched *in situ* (Jacobson) ; (5,) There is a difference in the appearance of a tubercular kidney, and of a kidney the seat of a calculus. The former has a yellow-whitish mottling, or a starred and fissured pallid surface ; the latter is even, and of a uniform dark red (almost to bluish-black) colour (Henry Morris) ; (6,) Hæmorrhage from an incision into the kidney is certainly arrested by firm, careful, and thorough plugging with strips of sal alembroth gauze. It is said that this plugging may cause vomiting and colic (Kendal Franks)—remove plugs next day (Jacobson).

IV.—Excision of the Kidney (Nephrectomy).

In what cases is Nephrectomy indicated?—(1,) Tubercular kidney in quite the earlier stages ; (2,) Tubercular pyelitis or pyonephrosis explored previously and drained by nephrotomy, but in which a discharging sinus persists ; (3,) Large hydronephrosis, unrelieved by drainage; (4,) Calculous pyelitis or pyonephrosis; (5,) Sarcomata in the adult and in the earliest stage ; (6,) Wounded or ruptured kidney injured beyond repair.

Methods :—(*a*,) Lumbar ; (*b*,) Abdominal.—(*a*,) Lumbar nephrectomy is the more popular, perhaps because that in it the peritonæum is unopened, and the wound permits of good drainage; but there are serious objections to it which have been urged by Mr. Thornton and others, backed by great success obtained through the peritoneal path. These objections are: (1,) The small space available for incision in most cases ; (2,) The danger of wounding a pleura with a low insertion ; (3,) The danger of wounding the colon or the peritonæum, and of fouling the latter without being aware of the accident ; (4,) The possibility of not being able to find the kidney at all, an accident which has happened in a large number of cases, and to experienced surgeons ; (5,) The possibility of removing a single kidney, without knowing that the patient has only the one ; (6,) The impossibility of noting the condition of the other kidney and ureter ; (7,) The fact that it is only suitable for a limited number of cases, it being impossible to remove much-enlarged kidneys, through any incision that can be confined to the loin. There are, however, some conditions in which the lumbar operation may properly be performed, notably cases in which a lumbar incision and drainage having failed, the extirpation has to be undertaken with a fœtid sinus, already extending from the

loin into the interior of the kidney; also in some cases of wound of the kidney.

Mr. Lawson Tait gives his opinion as follows: "The real fact is, the kidney is best reached by the most likely looking road, and in this respect different patients exhibit great variety of conditions. Whether the peritonæum be opened or not makes not a scrap of difference to the mortality, and makes very little difference as to the technique of the operation." Mr. Tait's mortality in nephrectomy is 18 per cent.

Points in the Technique.—(1,) If the tumour is of a suspicious nature and nephrectomy be determined on, the capsule should be removed, though the disease will recur in 50 per cent. of the cases of solid tumour whether this be done or not. If the kidney be merely the seat of inflammatory destruction the capsule may be left (Tait); (2,) Whenever it is possible after the kidney has been shelled out of its capsule, the edges of the capsule should be stitched to the skin when the pedicle has been secured. The advantages of this are (*a*,) that the wound heals readily; (*b*,) the pedicle can be readily reached if recurrent or secondary hæmorrhage ensues, and pressure can be easily applied; (*c*,) The ureter will not infect the general cavity of the wound (Bruce-Clarke).

Ligature of Pedicle in Abdominal Nephrectomy.—(*a*,) *The Vessels.*—"When it is found that the tissues lying above the kidney are normal, the fingers can be gradually insinuated under the peritoneal covering till the aorta is reached; from it the renal artery can be traced, and then the vessels can be ligatured before the kidney is enucleated, but when, on the other hand, there is much inflammatory thickening of the tissues and adhesion, the kidney must be enucleated before the vessels can be reached and cleared. In old-standing cases of pyelitis or pyonephrosis the adhesions about the vessels and hilum are often extremely dense and thick, so that the renal vessels can only be discovered when they are cut across and bleed, and can only be secured by running a needle armed with silk under their mouths in this dense tissue"; (*b*,) *The Ureter.*—"The last part to separate is the ureter, and before separation its renal end should be secured by pressure forceps, then a ligature tied a little way from the forceps, and a sponge placed under it before it is divided. Whenever it is possible I enucleate it for some distance from the kidney before dividing it, so that its cut end, with the sponge under it, may be at once drawn outside the abdomen; and I afterwards fix it in the lower angle or most convenient part of the abdominal incision with a cleansed safety pin. I regard this fixing out of the stump

of the ureter as the most important detail in the operation, and in every case in which I have been obliged to cut it off deep in the wound I have had distinct evidence of suppuration and trouble around it" (K. Thornton).

Tuberculosis of Kidney.

Lumbar pain, frequent micturition, hæmaturia, and colic, are symptoms common alike to tubercular kidney and renal stone. It is therefore extremely difficult in the earlier stages of the former disease to form a differential diagnosis. The chief aids are : (1,) Pyuria appears early in tubercular disease, urine being strongly acid at first. The sediment contains caseous débris, in which the bacillus tuberculosis may be found ; (2,) Frequency of micturition is nocturnal and not relieved by rest ; (3,) Intermittent rises of temperature are often observed early in the case ; (4,) Early exploration clears up the diagnosis and may arrest the disease by free incision and drainage (Knowsley Thornton), or allow of nephrectomy (Jacobson). In the later stages nephectomy is of no value.

REFERENCES.—Henry Morris, "Surg. Dis. of the Kidney," 1885 ; "Brit. Med. Jour.," vol. ii., p. 1081, 1889 ; Bruce Clarke, "Surg. of the Kidneys," 1886 ; "Brit. Med. Jour.," vol. ii., p. 1087, 1889 ; Lawson Tait, Ibid., vol. ii., p. 1087, 1889 ; R. Harrison, "Lancet," Dec. 7, 1889 ; Newman, "Surg. Dis. of the Kidney," 1889 ; Bennet May, "Brit. Med. Jour.," vol. ii., p. 1084, 1889 ; Kendal Franks, Ibid., vol. ii., pp. 139, 1088, 1889 ; Vannenfville, "De la nephrorrhaphie," 1889 ; Tuffier, "Etude Experimentales sur la Chir. du rein," 1889 ; Jordan Lloyd, "Practitioner," Sept., 1887 ; "Arch. Gén. de Méd." p. 562, 1889 ; "Bull. de l'Acad. de Méd.," Paris, Feb. 26, 1889 ; Knowsley Thornton, "Lancet," Dec., 1889 ; Drummond, Ibid., Jan. 18, 1890 ; McCoosh, "New York Med. Jour.," Mar., 1890 ; Jacobson, "Brit. Med. Jour.," vol. i., p. 117, 1890 ; Keyes, "New York Med. Rec.," Feb. 8, 1890.

Synopsis.—(Vol. 1890, p. 338.) In renal colic, ℞ Antipyrin 15 grammes, Bicarbonate of Sodium 5 grammes ; divide into 30 powders ; take 1 or 2 in the middle of meals. Buffalo Mineral Water ; exclusive use of Distilled Water in all beverages.

KOCH'S TREATMENT IN PHTHISIS, Etc. (See "Tuberculosis.")

LABOUR. *Arthur H. N. Lewers, M.D.*

Mr. Lawson Tait in an address to the Southampton Medical Society expressed himself in favour of Porro's operation as an alternative to be preferred to craniotomy in all cases where delivery of a living child *per vias naturales* was impossible. He based his argument largely on the assumption that the mortality of craniotomy was 20 per cent. To make a fair comparison, however, we must compare Porro's oper-

ation, performed by a skilled specialist, with craniotomy performed by an obstetrician of special experience. The mortality of craniotomy under these conditions at the present time is nothing like 20 per cent. "Not exceeding 6 per cent." would be a much closer approximation to the real mortality.

To mention my own experience (which I have no reason to believe to be at all exceptional), in the last five and a half years at the London Hospital I have had six cases of craniotomy. Several of the cases had been many hours in labour, and in these repeated efforts had been made to effect delivery before the patients were admitted. Yet all the cases recovered.

Mr. Tait's proposal to perform Porro's operation in cases of Placenta Prævia will recommend itself even less to obstetricians who are familiar with the rational treatment by which the dangers of these cases may be reduced to a minimum.

Post-partum Hæmorrhage.—In cases where all the ordinary means to check the hæmorrhage have failed, swabbing the interior of the uterus with strong **Perchloride of Iron** has usually been looked on as the last resource at our disposal. For cases of this desperate nature **Plugging of the Uterus with Antiseptic Gauze** is a preferable alternative. Dührssen and Auvard have recorded cases successfully treated in this way. A pair of long forceps, like ovum forceps, may be used to tuck in the gauze ; and the procedure is facilitated by drawing down the uterus and by seizing the anterior lip of the cervix with a vulsella. They recommend iodoform gauze. In a case of uncontrollable hæmorrhage after a miscarriage I adopted this treatment, using however dry carbolic gauze sprinkled with iodoform. The plug should be removed within twenty-four hours and the uterus washed out with an antiseptic solution.

The plug seems to act not only mechanically but also as a stimulant to uterine contraction. Any one who contemplates adopting this treatment should be provided with a very ample supply of the gauze. Not only has the cavity of the uterus to be filled, but the vagina must be firmly packed also, and the plugs kept in place by means of a T bandage.

Dr. William Hunter considers that transfusion is never required for the purpose of supplying red corpuscles to carry on respiration after sudden loss of blood, in a person previously healthy. The immediate source of danger in such cases is not the want of red corpuscles but the disturbance of the relation between the vascular system and its contents. Neither blood nor milk should be used for transfusion ; a $\frac{3}{4}$ per cent. solution of common salt fulfils all the objects required.

Hypodermic Injections of a Solution of Common Salt (·6 per cent.) have been used successfully in the Dresden Lying-in Hospital. Boiled

water cooled to the temperature of the body may be used. The quantity to be injected is a litre, and the situations best suited for the injection are the infra-clavicular and the inter-scapular regions. The absorption of the fluid is promoted by friction so as to disperse the fluid as much as possible.

Dr. Henry Coe records a successful case of *Supra-vaginal Amputation of the Uterus for Rupture.* When he saw the case, rupture of the uterus had occurred, and the child's head had passed into the peritoneal cavity lying in the left iliac fossa. "The patient's condition was desperate, and the surroundings were such that any approach to antisepsis seemed to be impossible." On opening the abdomen a rent was found extending upwards from the cervix through the left broad ligament and the lower uterine segment. The uterus was turned out of the abdomen, and the cervix constricted with a piece of rubber-tubing fastened with artery forceps. The child was then extracted through the rent. The uterus, with the ovaries and tubes, was then excised, the stump being secured in the wound with knitting-needles. The peritoneum was thoroughly washed out with hot water, and the wound closed. No drainage tube was used. At the end of the fifth week the abdominal wound had entirely closed but there was a cervico-vesico-vaginal fistula.

REFERENCES.—"Brit. Med. Journ." Aug. 10, 1889; Ibid., Mar. 22, 1890; "Lancet," Nov. 16, 1889; "Medical Record," Nov. 2, 1889; "Lancet," Nov. 9, 1889; Ibid., Jan. 25, 1890; Auvard, Travaux d'Obstétrique, Tome deuxième, Tamponnement intra-uterin; Hunter, "Brit. Med. Journ.," Aug. 10, 1889; "Lancet," Nov. 16, 1889; Coe, "Med. Record," Nov. 2, 1887.

Synopsis—(Vol. 1889, p. 324.) For vomiting after Cæsarian section, **Strong Coffee** and hourly minim doses of **Tr. Iodi.**; **Creolin**, 2 or 3% solution as styptic and antiseptic; **Quinine**, useful for clearing uterus of retained membranes. **Ustilago Maidis Fl. Ext.** ℥ x to xx, increases the pains if present. **Strophanthus** and **Rest** for pregnant cases, complicated by mitral stenosis.

LAPAROTOMY. (See "Abdominal Injuries.")

Synopsis.—(Vol. 1889, p. 333.) **Boracic Acid Solution, or Perchloride of Mercury**, 1 in 10,000 as antiseptics; **Atropine** gr. $\frac{1}{100}$ to $\frac{1}{50}$ hypodermically to prevent shock. If distension occur, use **Saline purge, Turpentine, Enema**, or passage of rectal tube.

LARYNGEAL TUMOURS. *P. Watson Williams, M.B.*

Shalita details an interesting case of laryngeal tumour, in which thyrotomy was twice performed.

Analyzing this case and reviewing the subject, Dr. Shalita comes to the following conclusions: (1,) Laryngo-fissure is absolutely indicated in all cases of malignant laryngeal tumours when the latter are cir-

cumscribed and are not accompanied by infiltration of adjacent tissues ; (2,) It is indicated further in all cases of suspicious tumours, as well as of benign ones, when the latter are multiple and have broad attachments ; (3,) It should be also resorted to in cases of laryngeal tumours in children under ten years of age ; (4,) In malignant cases, the operation should be performed as early as possible ; (5,) The new growth should be always removed, together with subjacent tissues ; (6,) When the operation is practised with due care (strictly median incision, careful adjustment of sutures, antiseptic precautions, etc.), the patient's voice, as a rule, remains in a satisfactory condition ; (7,) When performed under strict antiseptic precautions, laryngo-fissure is not dangerous to life.

REFERENCE.—"Vratch," No. 17, p. 389 ; "Jour. of Laryng.," Jan., 1890.

LARYNGISMUS STRIDULUS.

Synopsis.—(Vol. 1890, p. 340.) Antipyrin, gr. ij hourly, for a time, and then every two hours.

LARYNX (Diseases of the). *P. Watson Williams, M.B.*

Everyone who is extensively engaged in treating diseases of the nose, throat, and larynx must have found that the great disadvantage attending the use of cocaine is that it sometimes, when least expected, produces serious and annoying toxic effects. It is a striking fact, however, that the local use of cocaine in the eye seems to be most free from these results, while its application to the ear, nose, and throat is often followed by alarming results. In the "New York Medical Record" for June 21, 1890, Dr. Isidor Gluck writes that the combination of cocaine with phenol does away with these risks without interfering with the anæsthetic properties of the cocaine. Dr. Gluck dissolves 2 drops of phenol in 1 drachm of distilled water, shaking until solution is perfect, and then adds 10 grains of cocaine hydrochlorate.

The author states that he has been using this formula for over a year, and has since then, as yet, met with no instance where cocaine produced any toxic effect. He has been able to use it in any quantity, and in any part of the nose or throat, without the least fear of harmful consequences. Phenol, in the same manner as cocaine, by suspending the functions of the sensory nerves, is itself a local anæsthetic of no mean power, while the combined action intensifies the anæsthesia. Phenol also coagulates albumen, and combines with fats, forming a very superficial eschar, which prevents the rapid absorption of cocaine, and hence its toxic effect. Phenol is also

destructive of bacteria, fungi, etc., and prevents decomposition in the solution.

In conclusion, as results of this combination, Gluck claims the following advantages : (1,) Toxic effects are prevented ; (2,) The anæsthetic action is increased ; (3,) It prevents congestive reaction and decomposition of the solution, and renders the solution aseptic.

REFERENCE.—"Therap. Gaz.," July 15, 1890.

Synopsis.—(Vol. 1889, p. 335.) In acute laryngitis of professionals, use an **Emetic, Rest, Sucking of Ice** and **Cold Compress** continually. In chronic cases, **Sulphate of Zinc Spray** (grs. ij to 5j); inhalation of Tinct. Benzoin if hoarseness comes on while using the voice, or **Chloride of Ammon. Tablets** every fifteen or twenty minutes, and a **Carbolised Spray** three or four times daily ; sucking tablets of compressed **Chloride of Ammonium** with **Borax** or **Chlorate of Potash. Cocaine** applied to interior of nose, and **Chromic Acid** to mucous membrane if thickened. In erysipelas of larynx, ice internally and externally ; **Corrosive Sublimate Spray**, 1 to 2000 ; artificial feeding in case of dysphagia ; **Quinine** and **Stimulants** for collapse. Tracheotomy may be required. In laryngeal phthisis, rest is important ; an antiseptic atmosphere, *e.g.*, by Coghill's Oro-nasal **Respirator**, impregnated with a few drops of **Creasote, Carbolic Acid, Menthol, or Iodine**, singly or combined, and used several hours a day ; local sedatives and antiseptics, *e.g.*, **Menthol**, 20 % in **Olive Oil** ; application of 2½ to 5 % solution of **Cocaine** to relieve pain while swallowing food. Tracheotomy ; application of **Lactic Acid**, 40, 60, or 80 %, using **Cocaine** first. Scraping with sharp spoon before applying **Lactic Acid** gives good results. For nodules of the Vocal Cords, apply **Nitrate of Silver, Chromic Acid**, or the **Galvano-Cautery** ; some disappear under rest and use of mild astringents.

(Vol. 1890, p. 340.) **Thuja Occidentalis** has proved palliative in epithelioma of larynx—dose, 20 drops gradually increased to 5ii, and brush the tumour every two or three days with a mixture of the **Tincture** and **Glycerine.**

LARYNX (Intubation of). *Henry Dwight Chapin, M.D., New York.*

Prof. Ganghofer comes to the following conclusions regarding intubation and tracheotomy : (1,) O'Dwyer's method of intubation is in many cases a good method of treating diphtheritic stenosis of the larynx ; (2,) Intubation will never entirely take the place of tracheotomy ; (3,) Both operations should not rival each other, but be combined if necessary, or each used in its proper place ; (4,) In most cases intubation should be employed first, and tracheotomy later on ; (5,) The best results in the management of croup will be obtained by good hygienic surroundings, trained nurses, and isolation in separate rooms.

Dr. Guido Bell considers that intubation has not as yet fulfilled the expectations of the medical profession. The relief after intubation is not so complete or immediate as after tracheotomy ; the membrane and mucus occlude the tube, and cause coughing and distress. Frequently the tube must be removed, cleansed, and again inserted. Nor

has the difficulty of swallowing with the tube in the larynx as yet been overcome. He advances two simplifications in the method of intubation, which render it one of the easiest of surgical procedures, as follows: "I discard both the gag and the extractor. The father or the nurse takes the child on his lap, holding firmly the little hands, as for an ordinary examination of the mouth or the throat. When the child opens its mouth, I pass the left index finger quickly into the mouth and behind the root of the tongue. Gagging follows, and the larynx at once rises to the waiting finger. At this moment I put the tube in the larynx with the right hand, retaining it in place with the left index finger, withdrawing the instrument at once. This is done with such ease and quickness the child is scarcely aware of the operation, and resists less when intubation is necessary a second time. Certainly the child will cough and make efforts to expectorate, but *gagging* is a sure sign that the tube has missed its proper place. With an instrument in the child's mouth to hold the jaws apart, gagging is incessant, and the little one is excited and uncontrollable. Force then becomes necessary, which is manifestly dangerous in such a disease as diphtheria. But if the gagging is incited by the operator's finger, he is ready for the rising larynx, and can at once insert the tube. There is no biting for a few seconds after the finger is thrust into the larynx; this we know from the practice of the veterinary surgeons, who thrust their pills and boluses at arm's length into the throat of the most vicious horse; the finger, however, may be protected by wrapping adhesive plaster in front of the knuckle, as I always do.

"The following advantages are apparent, and may be claimed, for my method of intubation without the gag: (1,) The operator does not need an assistant; (2,) The child is not excited, and does not dread a repetition of the operation; (3,) The tissues of the pharynx and larynx are not injured by sudden and unexpected motions of the child.

"The second improvement of the customary method of intubation is in the removal of the tube by pressing it out of the larynx by grasping the larynx externally with the fingers, thus discarding the extractor entirely. I simply squeeze the tube from without up to the fauces, and hook it from the mouth with the finger. I have done so in five cases where removal with the extractor had repeatedly failed. In one case the neck was sore from blistering, and in another case the tube selected was too large for the larynx; nevertheless, removal did not cause much pain or discomfort. I fasten the thread to the cheek, as in my earlier cases I feared losing the tube—one was in the intestine ten days—and now fastening the thread has become a habit with me. Several times I have removed the tube so as to feed the patient;

I do not know if this is advisable, as repeated intubation causes irritation."

Dr. Waxham reports two hundred and ten cases of *intubation of the larynx*, with sixty-nine recoveries, or 32·85 per cent.

Dr. D'Heilly advises intubation of the larynx under the following conditions: (1,) In very young children in whom tracheotomy offers only slight chances of recovery, and in whom even a slight loss of blood would be harmful; (2,) In mild cases of croup which appear to be likely to continue as such and for which tracheotomy is a severe remedy; (3,) In very severe cases of toxic diphtheria, in which the patient is already weakened to such a degree that he might not be able to endure tracheotomy and its consequences; (4,) In cases of secondary croup following measles, in which tracheotomy is never successful. Tubage in such cases offers a slight chance of success; (5,) In all cases in which tracheotomy is impossible or dangerous.

The objection to the method is that the tube frequently becomes obstructed by false membrane, and the difficulty of administering nourishment.

REFERENCES.—"Jahrbuch f. Kind.," Bd. xxx., Heft 3, 1889; "Jour. of Amer. Med. Assoc.," Aug. 30, 1890; "Jour. Amer. Med. Assoc.," p. 882, 1889; Jahrbuch. f. Kinderh.," B. xxx., 1 und 2.

LARYNX (Spasmodic Disease of). *P. Watson Williams, M.B.*

Spasmodic adduction of the vocal cords as the result of irritation of the superior laryngeal nerves does sometimes give rise to such urgent symptoms as to require surgical assistance. For these conditions the operation of section of, or stretching, the laryngeal nerves, may be desirable.

Dr. J. P. Creveling reports two cases—one of division of the superior laryngeal nerve, which was made necessary by a tumour involving that structure, and which produced reflex disturbance in respiration, etc. In the second case the nerve was cut down to and tension applied for relief of spasmodic attacks of the larynx. In both instances the operation gave the desired result.

From the result in the above two cases, Dr. Creveling concludes that it may be inferred that the superior laryngeal nerve has an important bearing in spasmodic disease of the larynx, viz.: (1,) That irritation of its terminal fibres, as well as that of the body of the nerve, may produce spasm of the larynx; (2,) That a disturbance of this nerve may be reflected to other parts supplied by the pneumo-gastric, and *vice versa*; (3,) That division of the superior laryngeal may not be followed by serious results in the larynx; (4,) That proper tension applied to the trunk of the nerve may modify its influence or action on

the parts to which it is distributed ; (5,) That under certain circumstances it may be advisable to stretch or divide the nerve ; (6,) That the operation should not be performed except to relieve some extreme condition not amenable to other treatment.

REFERENCE.—"Jour. of Laryng.," Aug., 1890.

LARYNX (The Cortical Motor Centre of). *P. Watson Williams, M.B.*

We have on the one hand the valuable experimental researches of Semon and Horsley, and on the other hand true pathological evidence of such a centre adduced by the case reported by Garel and Dor, and, perhaps, that of Bryson Delavan. Semon and Horsley found that :—

(1,) There is in each cerebral hemisphere an area of bilateral representation of the adductor movements of the vocal cords, situated in the monkey just posterior to the lower end of the præcentral sulcus at the base of the third frontal convolution, and in the carnivora in the præcrucial and neighbouring gyrus. This area has a focus of intensest representation in the anterior half of the foot of the ascending frontal convolution. Stimulation of this point produces complete bilateral adduction of the vocal cords, which lasts as long as the stimulation is continued. Should, however, the latter be unduly prolonged the "*besoin de respirer*" overcomes the influence of the artificial stimulus and evokes a momentary but powerful abductor movement of the vocal cords. Stimulation of the more peripheral parts of the area evokes less and less perfect adductions as we proceed from the focus outwards, and when the extreme margin of the area is excited only what is known as the "cadaveric position" is assumed by the vocal cords.

The above description applies to the monkey, dog, and rabbit. In the cat they have observed curiously different conditions, for which, at present, they are not prepared to offer any explanation.

(2,) They have not been able to find an area of representation in the cortex of the abductor movements of the vocal cord.

(3,) If one of the cortical areas for adduction be so completely excised that stimulation of the neighbourhood of the lesion produces no effect upon the larynx, and if the wound be allowed to heal aseptically, no paralysis of the cords is observed. Further, if subsequently the corresponding area in the opposite hemisphere be excited, just as completely bilateral an adduction of the cords is produced, as if the opposite area were intact.

(4,) They have observed that on powerful or long-continued excitation of the laryngeal area true epilepsy of the vocal cords supervenes, gradually spreading to the neighbouring muscles of the face, neck, head, and upper limbs. From this they conclude that the epileptic cry is not, as has been so long believed, the result of a discharge pri-

marily from the medulla oblongata, but rather represents a stage in the cortical excitement popularly termed an epileptic fit.

(5,) Whilst they have found so distinctly specialized an area of representation of adduction in the cortex, and no corresponding area of abduction in this region, they have, on the other hand, found that direct excitation of the accessory nucleus in the medulla oblongata evokes abduction of the cords, and never anything else.

Dr. Garel's and Dr. Dor's case is that of a man suffering from ulcerative endocarditis with pericarditis, who, three days before his admission to the hospital, had been suddenly attacked with aphonia. On examination, apart from the cardiac symptoms, pulmonary œdema, etc., there was noted complete paralysis of the left vocal cord. Any other traces of paralysis were absent, and the case was, therefore, one of pure laryngeal hemiplegia. The patient died three days later, and at the autopsy there was found in the right hemisphere a small centre of softening, triangular in shape, and occupying the upper internal part of the lenticular nucleus, and extending slightly on to the external part of the internal capsule.

Dr. Bryson Delavan records the case of a merchant, sixty years of age, who suffered from an attack of left hemiplegia, with ptosis, paralysis of left side of the face and tongue, and whose voice, from being sonorous, became cracked, piping, and uncertain. All the symptoms began to clear up, and eventually almost disappeared, except the laryngeal ones, and the laryngoscope showed that there remained complete abductor paralysis of the left vocal cord, the position of which was in the median line. This continued for ten years, when the patient died from valvular lesion of the heart and pulmonary œdema.

The autopsy revealed extensive atheromatous disease of the vertebral and basilar arteries, with deflection outwards of the left vertebral, but with no embolus or thrombus in them. The posterior cerebrals, middle cerebrals, left anterior cerebral, and carotid were also atheromatous. In the left hemisphere, at the summit of the internal capsule, and in its anterior half, there were the remains of an old area of softening, and below and a little outside this there was a small space with smooth walls, in which a branch of the middle cerebral had lain. In the right hemisphere, in the upper portion of the middle third of the internal capsule, opposite to the anterior extremity of the optic thalamus, a small area of softening was found, involving the upper limit of the internal capsule for a quarter of an inch from before, backwards, and the upper portion of the outer body of the lenticular nucleus. In the right choroid plexus, a fatty tumour, five-eighths by three-eighths by a quarter of an inch, was found in the descending horn of the

lateral ventricle. In the right crus cerebri there was an indication of descending degeneration. A softening mass was found in the left segment of the medulla, situated in the path of the intra-medullary root-strands of the vagus nerve, and it involved a small portion of the ascending root of the trigeminus. This mass contained hyperplastic neuroglia, and was not of recent origin. The ventral vagus nucleus and the recurrent vagus root-strands were present on the right side, but absent on the left side. Many of the extra-medullary root fasciculi of the left vagus were degenerated.

What may we infer from the above facts? From their experimental and clinical observations Semon and Horsley concluded that :—

(*a*,) *Unilateral irritation produces bilateral effect.* Thus clinically in any irritative unilateral affection of this area, spasm of the glottis, that is, bilateral adduction of the vocal cords, may occur, for example, in laryngismus stridulus. That this view is not purely theoretical is shown by the association, in severe cases of the last-named illness, of the glottic spasm with the so-called carpo-pedal contractions. This association is most easily explained on the assumption that there is an overflow of energy from the laryngeal to the neighbouring cortical areas for the limbs.

(*b*,) *Unilateral destruction produces no effect.* There is, therefore, no such thing as unilateral paralysis of a vocal cord from lesion of a cerebral hemisphere, as has been asserted. The truth of this statement is made evident by the fact that motor aphasia is not identical with aphonia. Moreover, the observation, by one of the authors, of several patients with complete aphasia and right hemiplegia, only a few hours after the apoplectic stroke, has conclusively shown that in such instances the movements of the vocal cords are perfectly preserved.

But the case reported by Drs. Garel and Dor appears to indicate that unilateral destruction may produce paralysis of the vocal cord of the opposite side. Dr. Bryson Delavan considered that in his case the focus of softening on the medulla, occurring simultaneously with the lesion in the internal capsule of the opposite side, was instrumental in the production of the permanent laryngeal paralysis more by the complete destruction of the ventral or motor vagus than by interference with the root-strands, many of which passed through the old softened focus intact. The laryngeal symptoms he did not consider to be due to a cortical lesion ; hence the motor character of the ventral vagus nucleus is confirmed clinically, and the author believes that *laryngeal paralysis of central origin is caused by bulbar and not by cortical injury as a rule.*

Certainly, as Dr. Wolfenden remarks, it would seem that Messrs. Semon and Horsley's results "are in complete harmony with the most recent views of the relation of the cortical to the lower centres; for their experiments have shown that the representation of the laryngeal movements in the cortex is essentially that known as purposive or volitional, since it is adductional, that is, phonation; whilst, on the other hand, the bulbar representation of the larynx is essentially adapted for the so-called automatic processes of organic life, that is, abduction-inspiration.

"These experiments, as well as those they have previously published on the peripheral innervation of the larynx, corroborates in the fullest manner the ideas which Semon has put forward in his first papers on abductor paralysis, namely, the proclivity of the abductors to fail in organic, and of the adductors in functional, disease."

REFERENCES.—Semon and Horsley, "Brit. Med. Jour.," Dec. 21, 1889; Bryson Delavan, "New York Med. Jour.," June 22, 1889; Ibid., Dec. 14, 1889.

LARYNX (Tuberculosis of). *P. Watson Williams, M.B.*

From the cases we have observed, and from the reports of the majority of those who have employed Koch's lymph in the treatment of laryngeal tuberculosis, it would appear that the results are most favourable.

Of twenty-one cases under Moritz-Schmidt all were greatly relieved. In several of these previous treatment by curetting and lactic acid had apparently resulted in a cure, but the injection of 1 or 2 milligrammes produced a local reaction. Fraenkel has had a similar experience.

It was feared, from the violent local reaction and swelling observed in lupus, that the remedy could not be used in tubercular laryngeal disease, without giving rise to such a degree of swelling and infiltration as to cause asphyxia. Experience has shown, however, that, with proper precautions as to dose this hardly ever occurs, although we must always be prepared to perform tracheotomy in case such a difficulty should arise. In some few cases acute stenosis has seemed imminent; and Uchermann has stated that two deaths have already occurred from this cause. For all laryngeal cases, therefore, the initial dose should not exceed 1 milligramme.

It is in the proliferative forms of tubercular laryngitis that the greatest benefit is derived; in them the tubercular granulations seem to melt away, or drop off, under the treatment, rendering respiration much more free. In all cases there appears to be a most astounding and rapid relief of pain, enabling the patient to swallow with comfort,

even in cases where only fluid could previously be taken with the greatest difficulty.

Mr. Lennox Browne, as the result of his observations, states that under this treatment ulcers representing necrotic changes may develop and may heal with a rapidity unexampled, and that infiltration and quasi-new growths may become absorbed. Such a circumstance warrants us in supposing that similar changes take place in the lungs. In fact, some of the cases under Prof. Gerhardt are quite convincing on this point. Though there does not appear to be any marked difference in the reactionary fever that takes place as the result of this treatment, when employed for laryngeal disease from what is observed in the course of other maladies under a like procedure, there are often to be observed, as exceptions to the rule that change and fever go *pari passu*, actual physical alterations of the greatest importance taking place in the diseased structures when the reactionary fever is almost *nil*, and *vice versa*. The former exception of these two has so far happened to be the most frequent.

For general directions as to the method of diluting and injecting the lymph, see under article, "Tuberculosis."

LATERAL SCLEROSIS. (See "Locomotor Ataxia.")

LEAD COLIC.

Synopsis.—(Vol. 1889, p. 45.) **Hyoscin**, gr. $\frac{1}{100}$, was useful in some cases.

LENTIGO (FRECKLES).

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LEPROSY. *W. Allan Jamieson, M.D.*

Many interesting communications on this subject have been made during the year, but very little bearing on the question of treatment. Attention having been drawn to the condition of the Leper Asylum, on Robben Island, a select committee was appointed by the Legislative Council of the Cape of Good Hope, to inquire into the prevalence and increase or otherwise of the disease there. The conclusions which they came to, are as follows: (1,) That leprosy is on the increase in the colony; (2,) That it will continue to spread unless effectual measures are taken to check it, and if possible to stamp it out; (3,) That complete segregation affords the best guarantee for this. Most of the medical men examined were decidedly of opinion that it is contagious. One case was thus related: There was a cottage where a widow lived with her daughter; the daughter was a leper.

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The mother, who showed no symptoms of the disease, married a widower who had a son by his first wife. The whole party then lived together in a cottage. After some time, not only the mother but the second husband and the step-son were attacked with leprosy. Both these people were well-known to the doctor before the marriage, and there was not the slightest sign of leprosy in either of them. The girl and her mother have died. Another striking case was as follows: There was a coloured man affected with leprosy, on a farm. The farmer's daughter, about ten years of age, shortly after caught the disease; the coloured man being employed in butchering and other work about the farm and house. Another coloured man, the farmer's waggon driver, who used to be great friends with the first mentioned, next became a leper; the farmer also was affected. During the illness of the daughter, a young woman (now married) came to assist for some time, and is now a confirmed leper. The recounted events occurred in that family within the last fifteen years. The farmer and the last mentioned woman are alive at present. There never was any leprosy in that family before. Saliva conveyed from one child to another, was suggested as a possible means of communication; the children sharing sweets.

The Superintendent at Robben Island made one statement which bears on the fish theory of the origin of leprosy. He said, "We have great difficulty in obtaining fresh fish for the people at the asylum, but we are able to obtain dried fish, which we have occasionally to issue as rations, instead of meat. The lepers objected strongly to this ration of dried fish, given out on Tuesdays and Fridays; they said that after eating the fish they became feverish, and then after the third day a rash broke out; the fever then gradually passed away. I noticed these symptoms myself; the rash occurring as patches of flattened tubercles or shiny red blotches, and since we dropped the issue of salt fish the number of such cases has decreased. Lepers have a great craving for fatty food and plenty of greasy messes."

Dr. Morrow points out that the anæsthetic form may occasionally be confounded with syringomyelia, a disease formerly considered to be very rare, and only met with post-mortem, but of late a number of cases had been recorded. Its main symptoms were sensory disorders and trophic changes.

Beaven Rake relates two cases in which he tried excision of the early tubercles, and inunction of the red iodide of mercury, without advantage.

G. H. Fox, however, records an instance where systematic care, and the administration of **Chaulmooghra Oil** seemed to have entirely

arrested the downward degenerate changes, and with the exception of some numbness of the fingers, the man considered himself well.

REFERENCES.—"Practitioner," Oct. 1889; "New York Med. Journ.," Oct. 26, 1889; "New York Med. Journ.," Aug. 2, 1890.

Synopsis.—(Vol. 1889, p. 341.) **Chaulmoogra Oil** in emulsion, beginning with ℥iij t.d. and an ointment of equal parts of the oil and lard, to be well rubbed in for two hours a day. **Gurjun Oil**, i part to **Lime Water** iij parts, taken in the same way, and a liniment of equal parts of the oil and lime water to be rubbed in for two hours daily. **Resorcin Ointment** 20%; **Ichthyol Ointment**, 50%; **Pyrogallic** or **Chrysarobin Ointment**, 5%; 10% ointment of **Salicylic Acid** in **Oleic Acid**, well rubbed in, and **Sod. Salicylate**, grs. xv, t.d.

(Vol. 1890, p. 344.) **Gurjun Oil Emulsion** internally and externally with a generous diet; **Chaulmoogra Oil** as a dressing to the sores, and 6 grains of the seeds beaten into a pulp three times daily internally.

LEUCORRHŒA.

Synopsis.—(Vol. 1890, p. 345.) In young people, **Quinine** and **Iron** (Quin. Sulph. gr. ½, Liq. Ferr. Perch. ℥x), or **Arsenic** internally; occasionally an **Astringent Injection** may be necessary; in later life different causes and treatment present.

LEUKOPLAKIA ORIS. *W. Allan Jamieson, M.D.*

Unna has in former years treated this affection, usually caused by syphilis and smoking, or by the latter alone in non-syphilitic cases, by many remedies. The best results were obtained by **Chromic Acid** in the case of patches, by **Nitrate of Silver** and **Iodoform** for fissures. In very mild cases the use of continuous mouth washes of **Borax** gave better results than did **Balsam of Peru**, though this is useful. It is self-evident, though not universally known, that the absolute disuse of tobacco is essential, and that general anti-specific treatment does not exert the least influence on the complaint. The Paquelin will be found most serviceable. After chloroform has been administered, or cocaine freely employed, the parts, in particular the fissures, are to be energetically cauterized; where there are thickened masses, the first eschar is removed and the cautery used once more. The after treatment consists solely in mouth-washes of borax :—

℞ Sodæ Boratis	8·0	Aq. Menth. Pip.	ana 100·0
Aq. Destill.			

Some of this is taken into the mouth, kept there some minutes, then allowed to escape, and a fresh supply taken in. This is continued for half-an-hour at a time, and repeated at intervals of two hours for a like time. At night the burnt surfaces are painted with a 2 per cent. or 3 per cent. solution of **Nitrate of Silver**. In the day-time, the alkaline wash is used to prevent fresh induration of the epithelium.

Rosenberg reviews the measures which have been adopted for the

treatment of leukoplakia, and comes to the conclusion that none of those previously recommended are entirely satisfactory. He has found balsam of Peru to check the pain and to exert a favourable effect on the healing of the parts which are denuded of epithelium, and at the same time to clear up cloudy epithelial patches, and to cause deposits to disappear. In using balsam of Peru two points are to be attended to. One, that it is not possible in most cases to remove the affection by its means in a few days, or even in a few weeks, but, especially in cases of long standing, a correspondingly protracted application is necessary. Another, that it is essential that a pure preparation be employed, the drug being extensively adulterated. When there is much pain, and when fissures are present, it is to be applied by means of a fine brush. When thick deposits are present, and the parts are not sensitive, a brush with stiff bristles must be selected, so as to act in some degree mechanically. After the application to the mucous membrane a slight burning sensation is experienced, while the saliva flows freely. The patient must be warned not to permit the balsam to be washed off by the saliva. The application should be made by the patient himself from one to three times a day, and the drug should be kept for at least five minutes in the mouth. He cites a number of instances, some consequent on syphilis, some not, treated this way successfully. So far, there have been no recurrences, but he intimates that while Peruvian balsam locally applied can cause the disappearance of patches of leukoplakia, it can have no effect on the cause of the complaint; this should, therefore, in all cases be sought for, and if found, removed.

REFERENCE.—"Monats. f. Prakt. Derm.," Nov. 1, 1889.

Synopsis.—(Vol. 1890, p. 345.) As a caustic the concentrated solution of **Chromic Acid** in water is best, or superficial **Cauterization** by the Paquelin cautery may be used, and a weak solution of **Chromic Acid** or **Nitrate of Silver** applied subsequently to the peeling surfaces; local application of pure **Balsam of Peru.**

LICHEN PLANUS. *W. Allan Jamieson, M.D.*

The treatment of this obstinate affection though often successfully carried out by means of **Arsenic,** is still at times by no means satisfactory. The experience therefore, of Mr. Jonathan Hutchinson in a case where **Antimony** succeeded after arsenic had apparently failed, is most valuable. The patient was a man, aged forty-nine, who had a most extensive eruption of lichen planus, for which arsenic in full doses and tar solutions were prescribed; under this the disease became much worse, the skin was inflamed, and the man in a most distressing state from irritation. The treatment was therefore changed to the adminis-

tration of a ¼ grain of **Tartarized Antimony** and 12 drops of **Nepenthe** every four hours; a rapid cure resulted. Mr. Hutchinson, adds, however, that he dare not claim for the last prescribed remedies with certainty the cure, for he has in mind other instances in which, after the disuse of arsenic when it had seemed to increase irritation, recovery set in. Every now and then the benefit from arsenic seems to come after it is left off. This is only the case where it has appeared to definitely make the eruption worse. Probably advantage was gained in two ways, both from leaving off the arsenic and from giving the antimony and opium.

REFERENCE.—"Archiv. of Surg.," July, 1890.

Synopsis.—(Vol. 1889, p. 343.) *Lichen Pilaris.*—**Alkaline Baths**, with friction, followed by liniment of **Soft Soap** and **Spirits of Wine** with **Oil of Cade**, ℥j to ℥j, rubbed in with a piece of flannel. If redness is marked, use oil instead of the liniment; internally give **Ol. Morrh.** and **Iron.** *Lichen Ruber.*—**Arsenic** in chronic cases, and if it fails, **Bichloride of Mercury. Diuretics** followed by **Mineral Acids** and **Nux Vomica, Arsenious Acid Pills**, $\frac{1}{60}$ gr. at first, thrice daily after meals. Hypodermic injection of Fowler's solution ♏iv to distilled water ♏xx, daily for three or four weeks. Ointment of **Corrosive Sublimate**; ℞ Ung. Zinc Ox. 500·0, Acid Carbol. Ol. Olivæ ää 20·0, Cret. Prep. 10·0, Hyd. Perchlor, 0·5, M. To be well rubbed in. **Baths of Potassium Sulphide**, followed by **Vaseline** inunction; **Liq. Carbon. Deterg.** ♏x or ℥; to ℥j; **Water** or **Calamine Lotion**, dabbed on, or **Thymol** or **Naphthol**, grs. x to ℥ij to ℥j, **Lard** or **Vaseline.** *Lichen Scrofulosis.*—**Ol. Morrh.** internally and externally, keeping the skin soaked.

LITHOTOMY AND LITHOLAPAXY. *E. Hurry Fenwick, F.R.C.S.*

In an analysis of nine hundred and sixty-four cases of operation for stone, Sir H. Thompson stated: (1,) That stone in the bladder was not more common in children than in adult patients, as formerly supposed, due to the experience of the malady met with in hospital practice. Probably it might be so among the poorer class of the population, but it was far otherwise among those whose circumstances permitted a dietary unlimited in kind and quantity, as regards both food and drink. The following table afforded warrant for this assertion :—

Ages of male patients in private practice only.

Below 16 years.	16 to 24 years.	25 to 50 years.	51 to 70 years.	Above 70 years.	Total.
3	8	89	565	184	849

(2,) His experience had confirmed the value of the principle, which he had long ago insisted upon, of finding the calculus at the earliest date possible for the elderly adult male, in whom it so frequently occurred. Two cogent reasons existed for this : first, the stone when small was easily removed, and very little risk attended the operation ; secondly, at this stage of calculus production the re-formation of an acid calculus (uric or oxalic) could almost invariably be prevented by strict dietetic

precautions. As regards the choice of operation, Sir H. Thompson said that in the case of children he had employed lithotrity for stones of moderate size, but very large ones, which some perhaps might crush, he would prefer to cut; he liked the supra-pubic operation for boys, for the wound could be closed at once, but in adults he preferred a free opening, allowing drainage for some days afterwards. So also in the adult, crushing might be carried to stones of four ounces if one chose, provided a large evacuating tube could be passed. In connexion with this, he observed that the adult male of sixty-five to seventy-five possessed as a urethra a very insensitive and capacious channel, whilst the most irritable urethræ he had found in men of from twenty-five to forty, and any over-distension of these frequently gave rise to trouble. If an evacuating tube as large as No. 18 could be passed, a three-ounce uric acid stone when crushed could be removed with great facility. If he found an irritable passage with a rigid prostate, admitting only a No. 13 or 14, he preferred to employ the supra-pubic operation for a large calculus. His experience with children was small, but in them lithotomy had given good results.

Litholapaxy in Male Children and Boys.—Surgeon-Major Keegan, to whom this innovation is due, adds one hundred and two additiona litholapaxies in male children and boys, making in all an experience of one hundred and sixty operations, with a death-rate of 4·37 per cent., and an average stay in hospital of five days. He says: "When I advocate litholapaxy as being the best operation for the great majority of cases of stone occurring in male children and boys, I do so with a very important reservation, viz., that no one should attempt to perform it in boys until he has first gained some practical experience of it in adult males. The surgeon who meets with cases of stone only at rare intervals during his career will be acting more wisely if he adheres to lateral lithotomy or supra-pubic cystotomy."

The reports of litholapaxies in male children from other sources show that the opinion thus expressed is accepted on all hands as sound, and that the procedure is an important advance in the treatment of calculous boys. Three hundred cases are now on record, with a total mortality of seven deaths (2·5 per cent.).

Failures in Sounding for Stone.—Mr. Hurry Fenwick gives certain reasons for the occasional failure to detect calculi in the bladder by means of the sound. Chief among these reasons was the disposition of the folds of swollen and succulent mucous membrane, which can be seen by the cystoscope to partially envelop small stones in those cases in which chronic cystitis is present. Cases of sacculated stones discovered by the electric light are recorded, and the following rules are

formulated: (1,) Never sound during "an attack of the stone"; (2,) Reduce inflammatory swelling previous to sounding by a few days' rest in bed, and appropriate medicine; (3,) Sound in every position of the body (even in complete inversion in children) and with every degree of distension and contraction of the bladder. If renal colic has recently occurred, perform suction; (4,) Fully distend the bladder in order to examine the basal pouches; (5,) When the symptoms of stone are obvious, and suction, sound, and lithotrite have failed, use the cystoscope as a last resource.

REFERENCES.—Keegan, "Ind. Med. Gaz.," Jan. and Feb., 1890; Keegan, "Lancet," p. 715, vol. ii. 1890; Sir H. Thompson, "Lancet," Mar. 15, 1890; Marshall, "Lancet," p. 346, pt. i. 1890; Southam, "Lancet," p. 347, pt. i. 1890; "Lancet," p. 813, pt. i. 1890; Hurry Fenwick, "Med. Press and Circ.," Sept. 24, 1890; Morgan, "Lancet," Nov. 29, 1890.

LIVER (Biliary Cirrhosis of, in Children). *Alexander Crombie, M.D.*

The frequency of a painless enlargement of the liver occurring in children during the period of dentition, and almost invariably terminating fatally, has arrested the attention of practitioners in Calcutta during the past ten or fifteen years. On acount of the difficulty of obtaining post mortem examinations, the exact pathology of the disease could not hitherto be ascertained with certainty; but at a recent meeting of the Calcutta Medical Society, Dr. Gibbons, Professor of Pathology, exhibited four livers which had been removed from the bodies of patients who had suffered from it. As the disease is one of great rarity in other parts of the world, and is of considerable frequency in Calcutta if not in other parts of India, it will be of interest to note the circumstances under which it occurs, which as appears from the discussion, which followed the reading of Dr. Gibbons' paper, are sufficiently unique to mark the disease and render further investigation into its causes compulsory.

First, as regards its pathology, Dr. Gibbons found, in all his cases, the liver much enlarged, the surface granular or finely nodular, bile-stained, tough and fibrous on section, the gall bladder shrunken and empty, or nearly so, the orifice of the common bile-duct patent. The fibrous tissue is proliferated, not only in the interlobular spaces, but penetrating also within the lobules and separating the hepatic cells, or encircling them in groups of two or three. The amount of fibrous tissue is enormous, and large areas of liver substance are completely destroyed, consisting only of fibrous tissue in which numerous bile-ducts ramify, and a few brownish masses are found representing the destroyed liver cells. These bile-ducts are in such

large numbers as to suggest new formation. The proper liver-cell tissue is more or less completely destroyed and transformed into granular débris, pigment granules, and minute oil globules: where the destruction is less complete the hepatic cells are small and loaded with minute particles of brown pigment. The capsule is not thickened. The new-formed fibrous tissue is richly nucleated and well supplied with blood vessels. In all Dr. Gibbons' cases the spleen was found more or less enlarged.

In the second place the disease is confined to children, and runs its course between the eighth and thirtieth months, at or before which time it almost invariably proves fatal.

Thirdly, it is practically confined to the children of Hindus. Mohammedans, who are nearly as numerous in Calcutta as Hindus, do not suffer from it. Only one instance of its occurrence in a Mohammedan child was noted at the meeting.

Fourthly, it is a disease especially of the children of well-to-do Hindus, although it is also sometimes found among the poorer class of these people.

Fifthly, its prevalence is of recent date. The disease is of such a marked character that it could hardly have been over-looked by the past generation of Indian writers. Yet what is now the most striking disease of Calcutta is not alluded to even by so recent a writer as Norman Chevers, and the opinion of practitioners well qualified to say so, is that it was unknown more than twelve or fifteen years ago.

Sixthly, its prevalence is increasing, and it carries off sometimes as many as two, three and four children in one Hindu family, one after another, before they reach the age of two-and-a-half years. Cases are also reported from the Mufasal, but not with anything like the frequency with which it appears in Calcutta.

Various suggestions were offered at the meeting with regard to the etiology of the disease, but none of them seemed to explain the peculiarities of the incidence of the disease as laid down above. Dr. Gibbons was himself inclined to attribute it to improper food and the formation of digestive irritants during fermentation or decomposition in the stomach or intestines; but the exemption of Mohammedan children who are fed in precisely the same way as Hindu children, is opposed to that hypothesis. The fact of its being more frequent in Calcutta than elsewhere is against its malarial origin; and there was no evidence to support the belief that it is a manifestation of hereditary syphilis. The fact of its prevalence being concomitant with the extension of the underground drainage system in Calcutta, and the direct connection of this with the better class of houses,

especially the houses of well-to-do Hindus, was not mentioned at the meeting, but offers the least unlikely clue to the etiology of this most remarkable disease.

As regards the symptoms exhibited by these children, attention is generally called to a painless enlargement of the liver by an attack of fever, and febrile symptoms are frequent throughout the illness. Nevertheless intervals undoubtedly occur of several weeks' duration during which the temperature never exceeds 99°. During these intervals the child is happy, playful, and has a good appetite. Sooner or later it has an attack of fever during which the liver enlargement will be found to have increased, and in this way it may proceed till the lower border reaches the crest of the ileum. At the same time the spleen will generally be felt extending from below the opposite costal arch. With the enlargement of the liver there is increasing debility and emaciation, and finally jaundice and œdema of the extremities make their appearance, and the child dies either from exhaustion or by convulsions.

No treatment has been found to be of any avail in arresting the progress of the disease, though mention was made of one case of recovery following complete change of diet and purgation.

LIVER (Surgery of). *A. W. Mayo Robson, F.R.C.S.*

Wounds.—In a paper recently read before the St. Louis Medical Society by Dr. H. C. Dalton are recorded some interesting cases of wounds of the liver successfully treated by operation. In one case the bleeding after a stab was so excessive that the wound in the liver had to be plugged with a large quantity of gauze which was removed after forty-eight hours, when the peritoneal cavity was also cleared of blood clots. The wound healed by granulation and the patient left the hospital in a month quite well.

Volkman's Treatment for Echinococcus.—Dr. Ross strongly recommends Volkman's method of opening hydatids of the liver, *i.e.*, by a small opening into the abdominal cavity, followed by plugging with iodoform gauze between the liver and the parietes, dry dressing of the wound, and incision of the cyst after several days.

Partial Resection.—Dr. Vohtz describes a case in which he excised a large echinococcus cyst about the size of a child's head, occupying the lower and posterior surface of the liver; and with it a part of the greatly atrophied hepatic tissue was removed. The large wound was united by a strong continuous suture and the abdominal wound was closed, recovery being uninterrupted.

Dr. Garre records a case of extirpation of echinococcus of the liver by resection of a portion of the right lobe. He also describes two other

cases, in one of which he removed a prolapsed portion of the liver after a gunshot wound, in the other in which he excised a metastatic cancer nodule, all the cases recovering.

Primary Cancer.—Dr. Hansemann of the Pathological Institute of Berlin, points out, "That the occurrence of primary cancer of the liver is not so frequent as is often admitted; and that in many cases the primary source of the hepatic disease has been overlooked. Leichtenstern, he says, from records embracing the period between 1845 and 1872, gives seventy-two instances of primary, to three hundred and fifty-eight of secondary cancer. Hansemann himself in the Berlin records from 1870 to 1889, finds among the two hundred and fifty-eight cases of hepatic cancer, twenty-five of primary cancer of the gall-gladder, two of primary cancer of the larger ducts, and only six of true primary cancer of the liver; and two of these are doubtful.

Abscess.—Mr. Godlee's lectures published in the "Brit. Med. Jour.," for January 11th and 25th, "On the Surgical Aspect of Hepatic Abscess," will well repay studying *in extenso*. The following is a brief summary: (1,) Pyæmic abscesses do not call for surgical interference, or if in rare cases one should point, it is only opened to relieve symptoms, but without hope of doing permanent good; (2,) The same observations apply to abscesses resulting from suppurative phlebitis of the portal vein; (3,) Multiple abscesses associated with dysentery or ulceration of the bowels are very unfavourable for surgical treatment. They must, however, be opened, and treated on the same lines as the single or tropical abscess, because they cannot be certainly diagnosed; (4,) Single abscess of the liver, whether tropical or not, must, if it approach the surface, be opened, the following precautions being adopted:—

(*a*,) If it present at the epigastrium, the presence of adhesions must be ascertained before incising the liver; (*b*,) If through the chest wall a spot must be chosen below the normal limit of the pleura; but if by chance either pleura or peritoneum be opened the opening must be closed with a double row of stitches before incising the liver; (*c*,) Strict antiseptic precautions must be throughout adopted, either carbolic acid or some slightly soluble salt of mercury being employed for the dressings; (*d*,) The tube must be of large size at first, and a tube of some sort must be kept in, until the discharge is reduced to a very minute quantity; (*e*,) If the abscess have burst into the lung, pleura, pericardium, peritoneum, or kidney, and the position of an abscess be only suspected, and if the patient be losing ground, it is right to puncture the liver in the most likely situations, bearing in mind, that, though usually quite harmless, a slight amount of risk

accompanies this very trivial operation. This rule applies to cases in which the abscess has ruptured into any of the cavities mentioned above. If, on the other hand whether the abscess have ruptured or not, there are no means of diagnosing the whereabouts of the matter, and the patient be not losing or even gaining ground, the surgeon should hold his hand for a time.

(5,) Hydatids of the upper and back part of the liver are to be treated on the same lines; but in cases of this sort, and in those of subdiaphragmatic abscess it must be remembered that the diaphragm may be pushed up to a very great height, thus closely simulating intra-pleural suppuration; (6,) Empyema, pericarditis, and peritonitis caused by rupture of the hepatic abscess or hydatid must be promptly dealt with on general principles.

Dr. George Lezaeta Rivas in the "Revista medica de Chile," Nos. 11 and 12, discusses the surgical treatment of abscess of the liver in an elaborate article.

The following is a summary of Dr. Rivas' conclusion as to treatment: When abscess of the liver is suspected, the organ should be examined by exploratory punctures carried out with the strictest antiseptic precautions. It is not necessary for this purpose that adhesions should exist. Aspiration should in all cases be the first step in surgical treatment, and as much pus as possible should always be drawn off. If aspiration fails, the abscess should at once be opened antiseptically with a large-sized straight bistoury without waiting for adhesions to form, the site of the abscess having first been ascertained by exploratory puncture. If the abscess is situated in the convex surface of the right lobe, both puncture and incision should be performed in the eighth or ninth intercostal space; if in the concave surface, a finger's breadth below the arch of the ribs. In both cases a point between the posterior axillary and the nipple lines should be selected. If the abscess is in the left lobe, it should be opened in the parasternal line two centimètres below the costal arch. The length of the incision should be from three to twelve centimètres according to circumstances. Injections of tincture of iodine or chloride of zinc (2 per cent.) are often useful, but the quantity of fluid injected should never exceed the quantity of pus drawn off. For mere washing out of the cavity, Dr. Rivas prefers 2½ per cent. solutions of carbolic acid, and 3 to 4 per cent. solutions of boric acid. The sheet anchors of the treatment by incision are free opening and scrupulous cleansing of the abscess cavity, which should be scraped if needful. For drainage Dr. Rivas uses Masson's siphon tubes. Abscesses which burst into the pleura, the lung, the intestines, etc., should be treated by

antiseptic incision, a careful examination, being made, if necessary, under chloroform. Dr. Rivas gives details of twenty-seven cases treated according to these principles ; twenty-one were cured, and six died.

REFERENCES.—"Austral. Med. Gaz.," Oct. 1889 ; "Hosp. Ind.," pp. 22-610-612, 1889 ; "Ann. of Surg.," Feb. 1890 ; "Berlin Klin. Woch." No. 16 ; "Brit. Med. Jour.," Jan. 11, 25, 1890 ; "Rev. med. de Chile," No. 11-12 ; "Lancet," Jan. 11, 1890 ; "Proc. of Royal Soc.," 1890, and "Bull. de l'acad. de Med.," Nov. 4, 1890.

Synopsis.—(Vol. 1889, p. 345.) Ammonium Chloride grs. xx, t.d. in congestion ; Mercury, grs. ij, with Dover's Powder, grs. iij, every two or three hours for diarrhœa, but if skin is hot and dry and temperature high, use small repeated doses of Liq. Ammon. Acet. until skin is moist. Fomentations and hot bran bags locally. Olive Oil in hepatic colic. Enemata of cold water useful in catarrhal jaundice.

LOCOMOTOR ATAXIA. *Graeme M. Hammond, M.D., New York.*

The treatment of locomotor ataxia by suspension was most fully considered in the "Medical Annual," for 1890, but the following reports will prove interesting. Professor Dr. Renzi communicates his experience of suspension in the following cases : Seven cases of tabes dorsalis. In three of these no effect followed suspension. In the other four there was improvement in the lightning pains and in the power of walking. One case of ataxo-spastic tabes, and two cases of sclerosis *en placques* were benefited. Of two cases of chronic meningo-myelitis one was cured the other was improved. In one case of meningo-myelitis from hæmorrhage no effect was noticed.

Drs. J. S. R. Russell and James Taylor report the results of suspension in fourteen cases of tabes dorsalis, one case of lateral sclerosis and one case of postero-lateral sclerosis. The number of suspensions in each case varied from four to forty-five. Both of the last two cases were made worse from the very beginning. In the ataxic cases four experienced no change at all ; two were made worse ; the others were benefited, some, however, not until twenty or more suspensions had been given.

Dr. Landon Carter Gray in an exhaustive article on this subject thoroughly sifts the pathology of this disease. He concludes that the symptom-group to which the name of locomotor ataxia has been given are not solely the result of disease of the posterior columns of the cord but are oftentimes due to lesions of the direct cerebellar tract, the antero-lateral peripheral column of Gowers, the Spitzka-Lissaner postero-lateral column, and to peripheral neuritis. The patients who are alleged to have been cured are of the following kinds : (1,) The syphilitic cases ; (2,) Cases associated with general paresis of the insane ; (3,) The non-syphilitic cases.

The syphilitic cases the author sub-divided into those in which the ataxia is developed after specific infection, those in which the symptoms are associated with symptoms of intracranial syphilis, and those in which the lesion has been found to be a syphilitic meningitis. Numerous interesting cases of all these varieties of the disease are cited, and the treatment followed out in each case is detailed. Several of the cases demonstrated the remarkable fact that almost all of the symptoms of locomotor ataxia may disappear while the spinal lesions persist unabated. There can be no question whatever, but that the improvement in many of the syphilitic cases warrants the saying that they have been practically cured. The best results seemed to have been obtained by the use of **Mercury**, usually in the form of inunction, in connection with large doses of the **Iodide of Potassium**. The author had not been able to obtain such brilliant results in these syphilitic cases as have been described by such reliable authors as those quoted. The best he had been able to effect had been an improvement in such symptoms as the pains and other sensory symptoms, less often in the ataxia, and never in such phenomena as the Argyll-Robertson pupil and the lost patellar reflex. The non-syphilitic cases had been very intractable. Galvanization, rest, iodide of potassium, nitrate of silver, and the Faradic brush would effect a certain amount of improvement in certain symptoms. The ataxia was an obstinate symptom. The lancinating pains were best treated by absolute rest for several weeks at the outset of the treatment. Nerve stretching had not, as a rule, been successful. The suspension treatment is regarded as beneficial, and the brilliant results described by other physicians are not regarded by the author as exaggerated, judging from his own results, although his patients had been treated too recently to permit of a report as yet. The **Faradic Brush** for the relief of anæsthesia is recommended. The author concludes that there is no really authentic cure of locomotor ataxia. The syphilitic cases have yielded the best results, and they have done best the earlier the treatment has been begun.

REFERENCES.—"London Med. Rec.," Dec. 20, 1889; "Lancet," Oct. 19, 1889; "New York Med. Jour.," Nov. 16, 1889.

Synopsis.—(Vol. 1890, p. 351.) Suspension method contraindicated in great debility, emphysema, pulmonary phthisis, atheroma of arteries, diseases of the heart, and probably nervous diseases associated with muscular spasm and rigidity.

LUPUS ERYTHEMATOSUS.

Synopsis.—(Vol. 1889, p. 354.) *Internally*: Arsenic or Iodide of Starch. *Locally*: Tarry Ointments, Oleate of Mercury, Painting with pure liquid Carbolic Acid at intervals of a week, and using Lotion of Potass Sulphu-

rata, ℞ Pot. Sulphurat. ʒj, Zinci Sulph. ʒj, Glycerini ʒj, Aq. ad ʒvj, M. Ft. Lot. In severe cases **Salicylic** and **Creasote** plaster muslin followed by **Zinc Ichthyol Jelly**. Non flexible Collodion. When there is little hyperæmia, ℞ Zinc. Sulph., Pot. Sulphurat. āā. grs. xxx., Alcohol ʒiij, Aq. Rosæ ʒiv. The Zinc and Potash dissolved separately and then mixed.

LUPUS VULGARIS. *W. Allan Jamieson, M.D.*

Dr. H. G. Brooke advises as a useful preliminary mode of treatment in lupus vulgaris, as in some cases curative, as considerably reducing the field in which operation is necessary, as involving no pain, and as requiring in most instances no suspension of work or ordinary habits, the employment of the following ointment, viz. :—

℞ Hydrarg. Oleatis (2½%—5%) ʒj		Ichthyolis	♏xv
Acidi Salicylici	gr. x-xv	Olei Lavandulæ	q.s.

In every case it is better to commence with the lower doses and to increase gradually. It must be impressed upon the patient that the skin must not be broken by the application. Should it become sore, and threaten to break, the ointment is to be at once diluted with fresh lard. Open sores often heal under this weakened application, but if these are extensive, dressings of **Zinc** and **Carbolic Acid** ointment should be used till the surface is healed. The ointment recommended above is to be used with prolonged, slow, steady friction, and the longer the rubbing is continued the better. The skin may be dusted with starch powder after the ointment is rubbed in. The action has been most successful in cases which have never been operated on, but good results have followed its employment in relapses after previous "scrapings," while its effect is least marked upon nodules lying deeply among the fibrous meshes of old scars. Finally, when it has done all it can, any remaining spots may be treated with cautery, caustic, etc.

Saalfield, of Berlin, in view of the favourable results obtained by Landerer in the treatment of various tuberculous affections with balsam of Peru, was led to employ it in lupus vulgaris. The crusts are to be removed with soap and water and the remedy applied twice daily with a brush. The results were, up to a certain point, satisfactory ; the author believing that the balsam, more than any other known local remedy, as it were, prepares the disease for the more radical methods of treatment, such as scraping and the galvano and the thermo-cautery.

Klaus Hanssen reports the case of a woman treated for a long time for lupus of the lower lip by means of caustic applications, scraping with the sharp spoon, etc. A cure was not effected : on the contrary, new lupus nodules developed in the surrounding tissue. At the same time, so high a degree of sensibility took place in the affected parts that the slightest irritation, even the application of iodoform, caused severe and

long-continued pain, which even cocaine was powerless to relieve. The author now applied ice, as recommended by Gerhardt, with the result that within three days the pain was entirely relieved, and after the lapse of several weeks a complete cure resulted, with no relapse after three months.

REFERENCES.—"Brit. Jour. Derm.," May, 1890; "Deut. Med. Woch.," 1889; "Amer. Jour.," Jan., p. 99, 1890; "Jour. Cut. Dis.," vol. vii. No. 86.

Synopsis.—(Vol. 1889, p. 351.) **Lupus Vulgaris.** *Internally*: **Ol. Morrh. Strychnia, Iron; Tinct. Iodi.** ♏v t.d. *Locally*: Scraping with Volkman's Spoon, linear scarification; Cauterization, by Galvanic or Paquelin's Cautery. Unna's plaster muslins, composed of **Salicylic Acid** and **Creasote. Bichloride of Mercury,** grs. ij to ʒj. **Pyrogallic Acid** saturated solution in **Æther** or 10% ointment. **Electrolysis**; Screw instruments and dentist's burrs have been used to break up nodules. Painting on of 10% sol. **Pot. Permanganas** daily until a black crust forms, and nodules are softened. Paste of equal parts **Salicylic Acid** and pure **Beech Tar Creasote** applied twice daily even after nodules have disappeared. (Vol. 1890, p. 355.) **Salicylic** and **Creasote** muslins; **Lactic Acid** is useful where patches are limited, protecting the skin around by smearing it with **Lanolin**, then applying the pure **Lactic Acid** for ten or fifteen minutes and then bathing and drying the part and dressing it with Unna's **Zinc Ichthyol Salve** until next day, when the acid is again applied; **Ethylate of Sodium**; to destroy the recurring nodules puncture them with an acne lancet and insert a small piece of cotton moistened with the following, ℞ Corrosive Sublimate 1 part, Carbolic Acid or Creasote 4 parts, Alcohol 20 parts, M.; the cotton is allowed to remain in for about fifteen minutes.

LYMPHADENOMA.

Frank J. Wethered, M.D.

M. Reclus, at a recent meeting of the Paris Surgical Society, related the case of a young man who was the subject of lymphadenoma. The position of the enlarged glands (both sides of the neck) rendered extirpation out of the question. **Arsenical** treatment was vigorously pushed, commencing with 5 drops of Fowler's solution daily, which was increased by 2 drops every day, when also injections (amounting to 10 drops daily) were made of the same solution into the hypertrophied glands themselves. The injections produced small abscesses, which healed spontaneously; and at the end of two months, when as much as 25 drops per diem were being taken, and a notable diminution had taken place in the swellings, the treatment was suspended. It was, however, renewed from time to time, and finally replaced by **Phosphide of Zinc**, the result being most satisfactory, only two or three barely perceptible nodules remaining at the site of the previous tumour. M. Reclus gave particulars of two other cases similarly treated with success, and also of three in which the result was unfavourable. Although, then, he pointed out, arsenic could not be said to be absolutely specific, yet it is certainly very efficacious in lympha-

denoma, of which, clinically there are two forms—the benign and the malignant. Surgical interference, he thought, was harmful, in that it was rapidly followed by recurrence, as shown by Verneuil, Trélat, and Bouilly.

LYMPHATIC GLANDS (Inflamed).

Synopsis.—(Vol. 1890, p. 356.) Very Hot Compresses wrung out of boiling water and kept on for fifteen minutes, repeating this night and morning for about a fortnight.

MALARIA.

Synopsis.—(Vol. 1889, p. 58.) Parthenium Hysterophorus, grs. xv. daily in malarial fever.

MALIGNANT PUSTULE.

Synopsis.—(Vol. 1889, p. 354.) Sod. Sulphite; Quinine in large doses with early and wide excision of the pustule, or the injection of Iodine or Carbolic Acid 5% into the eschar.

MEASLES. *Frank J. Wethered, M.D.*

Huchard considers the important symptom in serious cases of measles to be the syncope of the heart; for this he administers daily from 2 to 3 grammes of **Caffeine** by hypodermic injection; he has for the last seven years adopted this treatment in infectious diseases, and found the results excellent.

Dienlafey has reported two cases of "malignant measles" which were greatly benefited by **Cold Baths.** The second case is worth recording, as it demonstrates well the method of procedure. The case was that of a girl aged twelve years; the temperature rose to 104° F., with vomiting, excessive agitation, and almost entire suppression of urine. The first bath was given about noon, the patient having a temperature of about 104° F., with pulse of 145. The bath was given at a temperature of 78·8° F., being cooled gradually to 77° and 70°, cold water first being applied to the head. The patient was withdrawn in about twelve minutes, with but little change in condition apparent. Two other baths were given—one at two o'clock and another at nine o'clock—in the same evening without producing any decided results. At the last the temperature was at 104° F., and numerous râles occurring in the right lung led to the fear of a pulmonary complication and considerable hesitation as to the pursuing of this plan of treatment. However, at two o'clock in the morning a fourth bath was given, and reduced the temperature to 103° F. The child passed water, skin became softer, and pulse fell to 125, while after the fifth bath the temperature fell to 102° F., and the sleep was calm. These baths did not have any effect on the eruption. The next morning at eight o'clock the child was still asleep, and the râles had disappeared.

Two other baths were given on the 26th of May, the temperature falling to 102° F., and progressively declining until the patient was completely cured. In consequence of the cold baths, the suppressed function of the kidneys was resumed, and as it is well known that suppression of urine is one of the dangers most to be dreaded in virulent diseases, the production of diuresis by cold baths is certainly a very strong argument in their favour.

REFERENCE.—"Therap. Gaz.," Aug. 15, 1890.

Synopsis.—(Vol. 1890, p. 358.) A mixture of **Linseed Oil** 1 part, and **Glycerine** 3 parts, greatly relieves cough; **Antifebrin**, 2½ to 3½ grains, dissolved in a little brandy, to which water is added, reduces fever, relieves itching and promotes diuresis; in many cases one dose a day was sufficient.

MENINGITIS.

Synopsis.—(Vol. 1889, p. 355.) Inunctions of **Iodoform** and **Lanolin** j to v in tubercular forms. **Iodide of Potassium** and **Ergot** have been used in traumatic cases.

MENORRHAGIA AND METRORRHAGIA.

Synopsis.—(Vol. 1890, p. 359.) **Bromide of Potassium**, ℥j, twice or thrice daily for youthful patients suffering from ovarian hyperæmia; **Digitalis** where heart is the cause; **Rest** when it is due to overwork; **Strychnine** when due to loss of muscular tone and general debility to flow being too free and lasting too long. ℞ Liq. Strych. ♏iij, Tinc. Digitalis ♏x, Ext. Hydrast. Can. Liq. ♏xv, Aq. ad. ℥j, M., t.d.s. **Ergot**, Liq. Ext. ℥ss, t.d.s.; **Hydrast.**, Liq. Ext. ♏xx, t.d.s.; and **Hamamelis Tinct.**, ♏v to x, t.d.s, where chronic metritis and pelvic hyperæmia cause the hæmorrhage; **Cannabis Indica** is uncertain. ℞ Ext. Ergotæ Liq. ℥ss, Potassæ Chloratis gr. x, Acid. Hydrochlor. Dil. ♏x, Infusi Gentianæ ℥j, t.d.s., for three or four months without intermission in cases of subinvolution. Removal of retained membranes or hypertrophied state of endometrium by **Curette** if necessary; **Emmett's Operation**, or the **Cautery**, for laceration of cervix; **Hot Vaginal Douche** is a valuable accessory; **Ext. Belladonnæ, Carbolic Acid, Iodine**, the **Thermo-cautery**, or the **Positive Pole** of the continuous current may be used as intra-uterine applications. Mucous polypi require the wire snare, and fibroid the écraseur for their removal; removal of the appendages or **Electricity** for myomata; **Tannin-wool Pad** for hæmorrhage due to cancer of cervix or erosion; **Abdominal Section** for tubal disease; for hæmorrhage due to pelvic inflammation **Rest** and administration of the **Bromides** alone or combined with **Hydrastis** and **Salix Nigra.**

MESENTERY AND OMENTUM (Surgery of).

A. W. Mayo Robson, F.R.C.S.

In the thirty-first volume of the transactions of the Obstetrical Society Dr. Rasch published an interesting case of operation for chylous cyst of the mesentery, which formed a large roundish elastic swelling in the middle of the abdomen. At the operation the tumour presented a pale pink appearance, and a milk-white fluid exuded on tapping. On opening the cyst it appeared as if the two layers of the mesentery were sepa-

rated from each other by a collection of milk-white fluid. The cavity was sponged clean, and the edges were sewn to the abdominal wound. The milk-white fluid oozed for some time from the cyst cavity, which at length closed up. Dr. Rasch believed that this was the first recorded case of a chyle cyst of the mesentery occurring in a woman. Hiniwater had recorded a chyle cyst in the right hypochondrium of an infant. Dr. Killian operated on a large retroperitoneal lymph cyst. Dr. Rasch did not think that in his case the cyst arose from obstruction of the thoracic or other lymphatic duct, but more probably from the rupture of a mesenteric lymphatic during exertion. Dr. Rasch then spoke of the difficulty of diagnosis. Mesenteric tumours generally appeared first in the middle line near the umbilicus, and had free transverse, but little vertical, mobility. Professor Bergmann's case of chyle cyst of the mesentery occurred in a man aged sixty-three. Dr. Rasch lastly justified his treatment as preferable to extirpation of the cyst or closure, after emptying the contents, without drainage.

Sir Spencer Wells reports in the "Brit. Med. Jour." for June 14th, 1890, two cases, one of dermoid mesenteric cyst, and another of cyst of the omentum. In the former, a quantity of fatty matter, with hair and epithelium, weighing 6 lbs., was removed, and the cavity drained; in the latter the cyst was opened, freed from its adhesions and removed, the abdominal wound being closed. Both patients made good recoveries.

Dr. Brookhouse, in the "Brit. Med. Jour." for Oct. 18th, 1890, reports the removal of a fibroid tumour of the mesentery, weighing 13¼ lbs. In order to effect removal the anterior layer of the mesentery covering the front of the tumour was divided, and the tumour itself was shelled out without much difficulty, and with very little bleeding. Unfortunately the patient died the next day.

MIGRAINE. *Graeme M. Hammond, M.D., New York.*

Dr. E. C. Seguin, in his lectures on the "Treatment of Neuroses," endorses the view that the majority of cases of migraine are the result of eye-strain resulting from the ill-balanced action of the external ocular muscles. It is in these cases that the mydriatics (**Belladonna, Atropine, Cannabis Indica, Hyoscyamine,** etc.) do good. They exert a sedative, and even paralyzing influence, on the third cerebral nerve and its attached muscle. Of course, by themselves, they afford only partial or temporary relief; but, when combined, with correction of the ocular defect by appropriate glasses and in some cases tenotomy, and if a reduction in the use of the eyes can be secured, a cure results.

REFERENCE.—"New York Med. Jour.," April 12, 1890

MOLLUSCUM CONTAGIOSUM.

Synopsis.—(Vol. 1889, p. 358.) *Tonics*: Ol. Morrh.; Touching the spot with pure Carbolic Acid and then applying flexible Collodion. Incising the tumours and squeezing out the contents.

MOLLUSCUM FIBROSUM (Fibroma).

Synopsis.—(Vol. 1889, p. 358.) Removal by knife, ligature, or cautery.

MORHŒA (Circumscribed Scleroderma).

Synopsis.—(Vol. 1889, p. 358.) Turkish Baths; Friction; Massage; inunction of Lanolin and Galvanization in neighbourhood of, but not over the patch. ℞ Sapo Viridis ℥ss; Ung. Hydrarg. ℥j, M. All treatment is unsatisfactory.

MUCOCELE IN INFANTS.

Synopsis.—(Vol. 1890, p. 362.) Passage of conical probes the size of 3 or 4 Bowman through the dilated punctum without slitting the canaliculus; Astringent Lotions and Scrupulous Cleanliness of conjunctiva and nasal mucous membrane may be first tried.

MULTIPLE NEURITIS.

Synopsis.—(Vol. 1890, p. 362.) Hypodermic Injections of Strychnia twice daily have relieved alcoholic neuritis, also in paralyses specially diphtheritic, beginning with $\frac{1}{10}$ gr. increased to $\frac{1}{6}$ gr.

MYALGIA.

Synopsis.—(Vol. 1889, p. 64.) Saffrol, ♏ xx, and increased.

MYCOSIS FUNGOIDES (Lymphodermia Perniciosa).

Synopsis.—(Vol. 1889, p. 359.) Pyrogallic Acid Ointment.

MYXŒDEMA (Thyroid-Grafting in). *P. Watson Williams, M.B.*

Since the intimate connexion between the destruction of the thyroid and the production of myxœdema has been generally known, there have been various suggestions made as to how help might be given to myxœdematous patients. Mr. Victor Horsley, encouraged by the experiments of von Eiselsberg, suggested that the progress of myxœdema might be arrested by transplantation (into the peritoneal cavity) of a portion of the **Thyroid Gland of the Sheep.** Von Eiselsberg had shown that the transplanted thyroid was capable of becoming vascularized in its new situation, and of continuing its function, since out of nine animals from which he extirpated one lobe, having previously transplanted the other into the mesentery or subperitoneal tissue, the only one which did not exhibit symptoms characteristic of total ablation was that animal in which the transplanted lobe had neither necrosed nor degenerated. The proposal of Professor Horsley—which was certainly remarkable—has actually been put in practice by M. Lannelongue, who reported his case at a meeting of the Paris Bio-

logical Society. The subject was a myxœdematous cretin, fourteen years of age. About two-thirds of the left lobe of the thyroid was removed from a young adult sheep, and transplanted into the subcutanous tissue of the child's chest, below the right breast, it being found impossible to insert it in the neck, owing to the presence of large "myxœdematous tumours" in that region. The capsule of the transplanted organ was removed before embedding it at a depth of three centimètres from the skin. The operation was aseptic, and the wound united without fever or suppuration. Whether any appreciable result will follow remains to be seen, but M. Lannelongue believes that the grafting has succeeded. Professor Horsley, however, has shown that the thyroid of the sheep most closely resembles that of man. M. Lannelongue said he derived his chief hope of its success from the way the engrafted thyroid in the case of a dog had not only grown well but had prevented myxœdema. M. Chauveau thought it probable that the engrafted thyroid would be absorbed, and stated that it was an easy matter to engraft a sheep's testicle in subcutaneous tissue, but that the organ was gradually destroyed. Superficial capillary adhesions, he said, do not suffice to maintain the vitality of the transplanted organ; large vessels are needed for this purpose.

REFERENCE.—"Le Progrès Méd.," p. 209, 1890.

NÆVUS.

Synopsis.—(Vol. 1890, p. 364.) Clamping the nævus first and then injecting 5 to 7 minims of Rectified Spirit of Wine; this may be frequently repeated.

NARCOTIC POISONING (Chronic).

Synopsis.—(Vol. 1890, p. 364.) Ext. Cannabis Indica, ½ gr. with a few grains of Compound Colocynth Pill, thrice daily, cured two cases, one of chronic chloral, and the other of chronic opium poisoning.

NASAL POLYPUS. (See "Naso-Pharynx.")

Greville MacDonald, M.D.

For purposes of clinical expediency we may divide the subject of nasal polypus into four main varieties, viz: (1,) mucous; (2,) cystic; (3,) fibrous; and (4,) cauliflower. In such a classification it must be clearly understood that pathology is not the basis, and that malignant and semi-malignant neoplasms, such as epithelioma and sarcoma, true naso-pharyngeal fibroma and fibro-mucous polypus of the post-nasal space, are excluded. Indeed, there is a steadily-growing conviction among those who have the largest opportunity of studying these cases, that ordinary benign polypi are simply expressions of a process of chronic rhinitis, the products of which, from one cause or

another, have undergone special modification; and certainly there is no justification for considering mucous polypus as either myxoma or adenoma. Etiologically therefore, polypus must be considered as the ultimate consequence of cold-taking, the point being of considerable importance both in treatment and prognosis.

Of the four varieties enumerated: (1,) Mucous polypus is the most commonly encountered. It is multiple in most cases, may be associated with each or all of the other kinds, and is found only in or above the middle meatus, never affecting the inferior turbinated body or the septum. It is grey or pink, translucent, having a wide or pedunculated attachment; has a strong tendency to local recurrence and is sometimes associated with suppuration, bone-disease, and empyema of one or other of the accessory cavities; (2,) The cystic polypus is less conspicuously multiple and often solitary. In the latter case it is usually situated further back, and may hang into the naso-pharynx; it is attached to the middle or sometimes the superior turbinated body, while it is distinctly pedunculated and is prone to recurrence. It is more translucent than the preceding variety, though this characteristic may be concealed by the large admixture of mucous-polypus tissue; (3,) The fibrous polypus is but a later stage of the mucous, the increasing growth resulting in augmented compression of the substantial elements in its composition. It is multiple, pedunculated or sessile, causes considerable distension of the nasal bones, etc., although there is no suspicion of malignancy. After effectual removal it appears less liable to recurrence than either of the preceding varieties. These fibrous polypi must be carefully distinguished from those syphilitic fibromata described by J. N. Mackenzie (*vide* "Med. Ann.," 1890, p. 370); (4,) The cauliflower polypus pathologically should not be described in conjunction with those forms of benign neoplasm just enumerated, seeing that it differs in structure, both macroscopically and microscopically. But etiologically it is similar, being also an ultimate consequence of a chronic hyperplastic rhinitis (q.v. "Med. Ann.," 1890). Clinically also it is naturally associated with the other varieties, being occasionally found in conjunction with polypus, both mucous and cystic. These cauliflower growths consist of lobulated and dendritic excrescences attached to the inferior turbinated body or to the anterior portion of the septum, as far upwards as the erectile tissue extends. They are grey or pinkish, never so translucent as even the mucous polypus, have a wide base of attachment, and sometimes completely fill the inferior meatus. When projecting backwards into the naso-pharynx, they may lose their lobulated aspect, sometimes attaining such enormous dimensions as to fill completely this cavity.

the harm arising from obstruction to nasal respiration the mental deficiency associated with this condition is most obvious. In a recent number of the "Brit. Med. Jour.," Mr. William Hill, writing on this subject calls attention to the fact that children who suffer from deafness due to enlargement of the lymphoid (tonsillar) tissues of the naso-pharynx and fauces are described by parents and teachers as backward and stupid, a condition attributed to their inability to hear. The characteristic countenance of such children—foolish, open-mouthed, pinched, and with a fallen-in condition of the alæ nasi—has been explained as the result of mechanical obstruction in the upper air-passages. That the symptoms are in part an evidence of a hampering of cerebral functions is borne out by the headaches and inability to fix the attention for any length of time. Mouth-breathing, faulty respiration, and unsanitary surroundings are certainly prejudicial to children's general health. Yet there is reason to believe that these factors, even when added to impaired hearing, are insufficient to account for the mental deterioration so often met with. That inability to fix the attention—aprosexia—and other allied neuroses are frequently associated with obstructions in the nose and throat was first insisted upon, in 1887, by Guye, of Amsterdam.

Experiments of Hill's, and our own experience, confirm this view. Operations on children for the relief of deafness associated with adenoid growths, enlarged tonsils, and hypertrophic catarrhal conditions of the nose frequently resulted in an immediate improvement in mental acuteness altogether incommensurate with the slight immediate improvement in hearing. The speedy relief of aprosexia and other cerebral symptoms following naso-pharyngeal scarifications can not be explained solely, in the author's opinion, on the ground of the correction of faulty respiration and improvement in the general health; Hill concludes, therefore, that operative procedures act beneficially by relieving congestions of the intracranial and venous systems, as Guye suggests. The intracranial veins and sinuses communicate with the veins of the frontal, ethmoidal, and sphenoidal air-sinuses, and through these with those of the nose and naso-pharynx and with the pterygoid plexus. The intracranial lymphatics pass out of the skull along the course of the nerve-sheaths, according to Key and Retzius. Those lymphatics which pass out through the cribriform plate of the ethmoid along with the olfactory nerves are in direct connection with the nasal and the naso-pharyngeal lymphatics, which converge to and eventually enter the follicular lymphoid glands of the nose, naso-pharynx, and fauces. The author contends—and has stated elsewhere—that the various tonsils and follicular glands are *par excellence* lymph-secreting

organs, which pour leucocytes and serum into the alimentary and respiratory tracts.

Thickened mucous membrane prevents lymph-leakage and diapedesis of leucocytes into the pharynx, giving rise to tension in converging lymphatic systems. Well marked enlargements of the inferior turbinated body, due to venous engorgement of erectile tissue, and adenoid and polypoid hypertrophy of the middle turbinated body may rapidly subside after the removal of enlarged tonsils and adenoid growths of the pharynx.

Ferrier has pointed out that extirpation of the prefrontal lobes in monkeys is followed by marked impairment of attention and observation. It seems not unreasonable to suppose that aprosexia and other symptoms, when associated with lymphoid overgrowths and obstructions, may be the outcome of lymphatic and venous stagnation and tension in structures occupying the anterior region of the cranium. In strumous or syphilitic children the question arises as to whether the want of cerebral development on the one hand, and the morbid conditions of the nose and pharynx on the other, have a casual or a causal relationship. Among the backward, idiotic, and imbecile children that were examined there existed the low, sloping forehead, indicating the small size of the anterior lobes of the brain. There were also mouth-breathing, night-snoring, some form of nasal or laryngeal obstruction, deafness in many cases, and aprosexia. A mental condition due to arrested development early in life or *in utero* is not likely to be much improved by naso-pharyngeal surgery. But surgical measures may lessen the number of stupid children, for whom the future, in point of earning a livelihood, is the reverse of cheering.

Mr. Hill's article presents many points of interest. They are enunciated on behalf of the lazy, stupid-looking child, who has frequent headaches in school, breathes through his mouth instead of his nose, snores and is restless at night, and wakes up with a dry mouth in the morning. This unfortunate being is earnestly recommended to the serious attention of his medical pastors and masters. Inability to fix the attention on any definite, abstract subject—aprosexia, as Guye terms it—is so serious in itself (and in its possible results) that the observations of Guye and Hill become at once of real value and definite importance.

Dr. Bryson Delevan, at a recent meeting of the American Laryngological Association, whilst admitting that usually adenoids make their appearance during childhood, and atrophy in adult life, mentioned cases in which the enlargement of Luschka's tonsil has persisted through the middle life, and others in which the hypertrophy apparently

has begun after puberty, especially in women of stout figure, who suffer from attacks of catarrh of the upper air passages and dyspepsia, with or without concurrent disease of the faucial tonsils.

Singers are especially liable to this trouble, and on examination the pharyngeal tonsil is seen to be enlarged, congested, and bathed in mucus, and it is capable of impairing hearing by pressure on the Eustachian prominence.

Dr. Bryson alluded to a case in which there was alternate enlargement and subsidence of Luschka's tonsil analogous to that of the faucial tonsil, under the influence of coryza; this observation, he believes, and we agree with him, is quite original and evidently very important.

M. Ranlin (Marseilles) too, has drawn attention to the existence and relative frequency of adenoid growths in adult age. Observed in persons of forty, fifty, sixty, and even of seventy years, they date generally from childhood, as is proved by recollection, by osseous deformity of the head, and by the chronicity of the troubles of hearing. He states that the symptoms are of little importance; respiratory troubles are absent, or, if present, are due to the passive congestion of the cavernous tissue of the turbinated bones. The patients complain, in the majority of cases, either of naso-pharyngeal catarrh, or of deafness. This last symptom is in no way influenced by the destruction of the growths, on account of the long continuance of the lesions of the middle-ear. The most advantageous treatment is by removal with the different kinds of adenotomes; ablation is more completely effected than with the forceps, with which it is not possible to seize the more or less atrophied remains of growth which surround the tumour.

REFERENCES.—"New York Med. Jour.," Feb. 15, 1890; "Jour. of Laryngology," Feb., 1890.

Synopsis.—(Vol. 1890, p. 365.) Small vegetations may be removed by finger nail, and the larger by Schutz's antero-posterior forceps, followed by curetting with Lennox Browne's moveable curette or various other curettes, and the naso-pharynx may be bathed with a spray of Common Salt, $\frac{3}{4}$% solution for several days afterwards.

NEPHRECTOMY. (See "Kidney, Surgery of.")

NEPHRITIC COLIC.

Synopsis.—(Vol. 1889, p. 57.) Orthosyphon Stamineus; Infusion (v grammes to water, j litre) daily.

NEPHROLITHOTOMY. (See "Kidney, Surgery of.")

NEPHROPEXY, NEPHRORRHAPHY. (See "Kidney, Surgery of.")

NEPHROTOMY. (See "Kidney, Surgery of.")

NERVOUS REFLEX DISORDERS.

Synopsis.—(Vol. 1889, p. 360.) Injection of 20% solution Cocaine into urethra when irritation of urethra is cause of neuralgia. Insufflation of tympanic cavity when ear irritation causes epilepsy. Antipyrin, Belladonna, Opium and Iodoform Suppositories, and Stretching the sphincter for chronic spasm or neuralgia of rectum affecting other viscera.

NEURALGIA. (See also "Sciatica.")

Graeme M. Hammond, M.D., New York.

Dr. M. Imogene Bassett reports the favourable results obtained from the proper use of **Gelsemium** in spasmodic torticollis, in facial tic, and in neuralgia of the fifth nerve. The dose of gelsemium even of the same preparation, varies through wide limits for different individuals. The case of torticollis took, during the greater part of three weeks, 26 drops, or 13 minims of the fluid extract every two hours night and day. In the case of facial tic, the initial dose was 2 minims four times a day, with directions to increase the dose until constitutional symptoms supervened ; 8 minims was the maximum dose that could be tolerated. In three cases of neuralgia of the fifth nerve decided relief from pain was produced by extremely small doses of the fluid extract, these doses also gave rise to toxic symptoms. In two other cases of ciliary and supra-orbital neuralgia the pain was relieved by doses of 3 minims.

A Russian practitioner recommends the following treatment for toothache. Burn the seeds of **Hyoscyamus Niger,** and convey the smoke through a little paper tube to the hole in the tooth. One or two applications will suffice.

Dr. George Leslie reports twenty cases of headache, faceache, toothache, earache, and allied complaints, which he has cured by the application of powdered **Chloride of Sodium**—common salt—to the nasal mucous membrane. The salt may be used by the patients as snuff, a pinch being taken into the nostril on the affected side, but the best results have been obtained by throwing about 4 grains of the drug up the nostril by means of an insufflator. In recent cases one application is usually sufficient, but when the disease has been of long standing, and of extensive distribution, it may be necessary to apply the insufflation every half minute for about five minutes.

Pain Caused by Sudden Removal of Nerve Pressure.—Dr. Edward F. Wills reports two cases in which excruciating pain in the legs followed childbirth. In each instance there had been considerable œdema of the legs and the pain was observed to follow the subsidence of the œdema. They were relieved greatly by the application of a tight bandage.

Causalgia.—Mr. Arthur E. Watson reports a case of this disease relieved by bathing the afflicted member in hot water. Causalgia was

first described by Weir Mitchell, and is a term applied to a condition of neuralgia of the extremities, characterized by a violent burning pain in the peripheric regions of the affected nerve. This pain is usually accompanied by a white and shiny appearance of the fingers or toes during attacks. In Mr. Watson's case, drugs, liniments, etc., were useless. Cold increased the pain, while bathing the hand in very hot water arrested it. Weir Mitchell's cases were benefited by subcutaneous injections of morphine into the parts affected, and by the repeated application of blisters.

The writer of this article has seen three cases of causalgia cured by treating them with the continuous galvanic current once or twice daily for a period of two or three weeks. During the paroxysm of pain hot or cold water should be used according to which seems to afford the better relief. The galvanic current is best applied by placing the anode on the skin over the cervical spine and the cathode in the palm of the hand. The current should be as strong as the patient can conveniently stand, and care must be taken not to interrupt it. The *séance* should last about five minutes.

REFERENCES.—"Therap. Gaz.," July 15, 1890; "Lancet," Nov. 16, 1889; "Edin. Med. Jour.," p. 614, Jan., 1890; "Med. Record," June 14, 1890; "Lancet," March 22, 1890.

Synopsis.—(Vol. 1889, p. 361.) **Antipyrin** in small frequently repeated doses; **Antifebrin** grs vijss to xv, twice or thrice daily. Refrigeration: **Chloride of Methyl Spray, Condensed Carbonic Acid Gas. Phenacetin; Salol,** in neuralgia associated with gout or rheumatism, small doses (gr ½ to ij) were used. Use of galvanic current and hollow carbon electrode filled with **Chloroform. Delphinium Staphisagria,** gr $\frac{1}{10}$ hypodermically every two hours (p. 37). **Menthol,** gr. v to xx in supraorbital neuralgia (p. 53). **Saffrol** ♏ xx (p. 64).

(Vol. 1890, p. 367.) Use of Luys' revolving mirrors; **Chloride of Methyl Spray,** painting the surface with **Glycerine** previously; **Croton Chloral** in trigeminal neuralgia in doses of 15 to 45 grains as follows, ℞ Alcohol 2 parts, Water 240 parts, Butychloral 1 part. **Chloride of Ammonium** for pelvic neuralgias and muscular pains; **Phenacetin,** 7½ to 15 grains in the pains of tabes in trigeminal and occipital neuralgias.

NEURASTHENIA. (See "Gastric Neurasthenia.")

NEURITIS (Arsenical). *Graeme M. Hammond, M.D., New York.*

Dr. Henry S. Stark reports the case of a girl who swallowed a quantity of Paris green, with suicidal intent. She was kept moderately under the influence of narcotics for about ten days. At the expiration of this time she noticed that her vision was becoming indistinct, and her hearing defective. An eruption of "red pimples" appeared on the forehead. These symptoms disappeared in a few days. Twelve days after taking the arsenic she began to have darting pains in the legs,

feet, forearms, and hands. There were also feelings of numbness, coldness, and formication. There was great sensitiveness to pain from touch. She developed characteristic wrist-drop and foot-drop. Atrophy supervened of the muscles of the radial, posterior brachial, anterior tibio-fibular, and peroneal regions. The deep reflexes were absent. The patient was treated with daily applications of the galvanic current, systematic massage, the extremities were wrapped in cotton, and she was put on fairly large doses of **Iodide of Potash** and **Strychnine.** In a few weeks she recovered.

REFERENCE.—"Med. Record," June 21, 1890.

NOSE. (See "Nasal Polypus," "Naso-Pharynx," "Coryza," "Hay-Fever" etc.)

Synopsis.—(Vol. 1889, p. 363.) For *Nasal Obstruction:* mild **Alkaline** and **Antiseptic Douches** followed by mild **Antiseptic Ointments.** In acute cases, avoid lotions and use 2 to 5% **Cocaine** solution by spray or pencil, or an **Ointment of Cocaine** with **Eucalyptus** or **Thymol.** Continued use of graduated dilating tubes where thickening of mucous membrane is slight. **Galvano-Caustic Puncture** for enlarged turbinated body due to erectile tissue, or **Chromic Acid** may be used. **Galvano-Caustic Snare** for pendulous outgrowths. Forcible straightening and application of **Nasal Splint** for deviation of septum, or the use of **Curtis's Nasal Trephine** or the **Nasal Saw,** followed, if necessary, by use of **Nasal Tubes** or **Galvano-Caustic Puncture,** if mucous membrane encroach on the newly formed space. For post nasal adenoids, scraping them off with the nail and removing them with Schech's **Post Nasal Forceps.** In *Atrophic Rhinitis,* use antiseptic and cleansing treatment and **Continous Current;** insertion of **Cotton Wool Plugs;** application of **Nitrate of Silver** solution (gr. v to ℥j) every other day, or use first **Alkaline** and **Antiseptic Douche** and remove all crusts by forceps, swab, or syringe, and then apply **Glycerine** with **Carbolic Acid** and **Iodine,** or insufflate **Iodoform,** and give tonics or alteratives as required. As a snuff, ℞ Menthol (pulv.) ℥ss, Ammon. Chlor., ℥jss, Pulv. Ac. Borac, ℥j, M. Treatment of *Hay-Fever* by correction of abnormalities in nose, and as palliative for itching of eyes, inhale **Ol. Menth. Pip.,** and if any sensitive point in nasal mucous membrane can be found, apply **Galvano-Cautery. Calcium Sulphide,** gr. $\frac{1}{15}$ in hypertrophic rhinitis (p 28). **Concillana Bark Decoction** locally in acute or chronic nasal catarrh (p. 34). **Menthol** 5 to 20% solution applied locally (p. 53).

(Vol. 1890, p. 369.) 25% **Alcoholic Spray** to shrink the stumps after removal.

OBSTETRICS. (See "Labour," "Uterus," etc.)

ŒDEMA.

Synopsis.—(Vol. 1889, p. 56.) **Nerium Odorum,** v centigrammes in pill acts as diuretic and diminishes œdema.

ŒSOPHAGUS. *P. Watson Williams, M.B.*

The treatment of cancerous stricture of the œsophagus by Charteris-Symonds' tubage method was fully described in the "Medical Annual" for 1890, p. 376. More recently Senator has

stated that he has obtained comparatively good results from his use of **Laminaria Tents** in œsophageal stricture. A piece of laminaria is attached to the end of an ordinary œsophageal bougie, and for greater safety this is further connected with a string running through the whole length of the bougie. Different sizes are used according to circumstances. The instrument is passed into the stricture and left in position from half an hour to an hour, during which time the laminaria swells to a considerable extent. In one case it expanded from one to one and a half millimètre in the course of half an hour. The surface of the laminaria remains smooth, and does not injure the mucous membrane. In most of the cases in which Dr. Senator has tried this plan the stricture has been cancerous. In a large proportion of his cases the treatment produced very marked dilatation of the stricture, so that the patients after a certain time could swallow much better than before. In some instances there was no improvement, and Senator confesses that at first his anxiety to dilate the stricture as quickly as possible made him apply the treatment without sufficient regard for the tolerance of the diseased parts. If due care is not exercised, the laminaria may swell so much as to cause great pain, and even difficulty in removal. The most favourable cases for the treatment are, of course, those of cicatricial stricture.

A new œsophageal bougie, invented by Dr. Roe, presents some advantages over the ordinary form. The tip is made of india-rubber, and is made all in one piece by simply governing the vulcanizing process so that one end of the bougie is vulcanized as hard rubber while the other is vulcanized as soft rubber.

These bougies are made in a series of six or more, of different sizes.

REFERENCES.—"Brit. Med. Jour.," June 22, 1889; "New York Med. Rec.," Oct. 26, 1889.

OMENTUM (Surgery of). (See "Mesentery.")

OPHTHALMIA (Phlyctenular). *W. Lang, F.R.C.S.*

Photophobia, often so marked a feature in these cases, is best treated by **Eserine.** A drop of a solution of ½ or ¼ of a grain to the ounce, applied every four hours, will usually cut it short within one or two days. If an ointment of yellow **Oxide of Mercury,** 1 grain to the drachm of **Vaseline,** be used night and morning the general health and any local trouble such as eczema, nasal catarrh, prurigo capitis, etc., attended to, prompt recovery will take place, without the use of setons, blisters, leeching, or the dark room. Where there is no photophobia, atropine is generally prescribed to be used as a detective with the yellow ointment; but even in these cases eserine is

quite as valuable, but it must give way to atropine at the end of the treatment when the error of refraction, so usually present, has to be corrected.

Synopsis.—(Vol. 1889, p. 367.) Hydrarg. Perch., 1 in 3000; Sod. Bicarb., 8 to 10% solution, instilled three or four times daily in purulent forms, even in old cases. Daily installation of Cocaine with scarification and cauterization by Glycerole of Copper in granular conjunctivitis. For trachoma, Sol. Hydrarg. Perchlor., 1 in 300 or 500 brushed on lids, and washing out eyes every two hours with a warm solution in 7000. ℞ Iodine, j part, Potass. Iodid ij parts, Water, 5000 parts, gave good results; pressing out the trachoma granules and then irrigating with corrosive sublimate solution.

(Vol. 1890, p. 378.) In purulent ophthalmia, Ice applied to lids reduces the swelling very quickly, and use Sulphate of Eserine or the application of Nitrate of Silver 2% solution brushed over the lids as early as possible; Lot. Hydrarg. Perchlor. introduced on a soft camel's hair brush into the upper cul-de-sac and daily repeated; Crede's method of wiping lids dry directly after child's birth, washing the lids with clean water and soap, drying them and instilling one drop of a 2% solution of Nitrate of Silver to prevent ophthalmia neonatorum; Mercurial Frictions or sub-conjunctival injections of Perchloride of Mercury, 1 in 2000 increased to 1 in 1500, for sympathetic ophthalmia.

OPTIC NERVE (White Atrophy of).

Graeme M. Hammond, M.D., New York.

Treatment by Suspension.—M. Darier has tried suspension in cases of this character with reported success. An ataxic case who was blind in one eye, and had only vision of one quarter in the other, experienced an improvement of vision to one half. A case of juvenile atrophy improved from one fifteenth to one sixth. In another case of ataxia the gain was from one sixth to one third. Others who tried this plan were unable to adduce any positive success.

REFERENCES.—"Ophthalmological Soc. of Paris Report;" "Practitioner," Dec., 1889.

ORCHITIS.

Synopsis.—(Vol. 1889, p. 369.) Full and repeated doses of Quinine in malarial orchitis; Pulsatilla.

ORTHOPÆDICS.

Hugh Owen Thomas, M.R.C.S.
Robert Jones, F.R.C.S.

To those interested in this branch of surgery the International Congress of 1890 will be remembered as having been the first to institute an orthopædic section, which met each day of the week and which proved an unequivocal success. The general president was Julius Wolff, of Berlin. Newton Shaffer, of New York, opened the proceedings in a paper advocating the delegating of orthopædic surgery to the hands of specialists. It would be very unfortunate if specialism should be carried so far. Most of the radical advances which have been made on the subject of deformities have emanated from the general surgeon,

who has applied oftentimes principles governing his practice in other departments to this special branch. The simplification of the character of apparatus is not attained by specialism, but the contrary obtains, as is abundantly manifest when we examine the costly and complicated appliances so commonly used.

The transactions of the American Association were published early in 1890, and afford ample evidence of the assiduity and earnestness of its members. V. P. Gibney, New York, read an interesting paper on what he designates the typhoid spine. If pressed for an anatomical diagnosis he would term it perispondylitis, meaning an acute inflammation of the periosteum and the fibrous structures which hold the spinal column together. His reason for this term was the production of acute pain on the slightest movement whether lateral or forward, and the absence of any marked febrile disturbance or neuralgia. Dr. Keen, of Philadelphia, in one of the Toner lectures, in 1876, gave a full account of the bone lesions following the continued fevers. He found thirty-seven out of forty-one cases followed typhoid fever. From a perusal of Gibney's cases, the symptoms appear to have been sharp, lancinating pains in the back, inability to sit erect, tenderness on deep pressure over the iliac regions. The treatment adopted was **Rest, Counter Irritation** and **Morphine,** where pain was severe. The prognosis is not grave.

I.—The Abscesses of Hip Disease.

Drs. R. W. Lovett and Goldthwait, Boston, read a paper on this subject based upon the examination of some hundreds of hospital patients.

The authors recommended early preventive treatment, best obtained by confinement of the patient to bed at the onset of joint tenderness. By the exercise of care the abscesses might be averted in the large proportion of cases. When abscesses did occur after initial care the mortality per cent. was exceedingly high, and the prognostic outlook very much more serious than in suppurating hip disease in general. Operation did not seem attended by septicæmia, nor did it prevent the occurrence of tubercular meningitis or amyloid degeneration. Thorough operation was followed in a fair proportion of cases by the speedy and permanent closure of the abscess. Gibney, New York, recommended leaving abscesses in connection with the hip unopened, provided they were not very large or accompanied by febrile symptoms. If obliged to open them, he carefully cleaned the sac, packed it with iodoform gauze, and converted the sac into a sinus. Constitutional symptoms rarely followed. He was of opinion, subject to further investigation, that the frequent squeezing and washing out of

abscesses resulted in harm. De Forrest Willard, Philadelphia, strongly objected to pressure on abscess cavities after incision, as he considered this greatly increased the risk of transforming a local into a general tuberculosis. Before incising the abscess, he aspirated it and injected an iodoform solution, which he left for some days prior to operation. A. M. Phelps urged that a tubercular hip-joint was not a purulent hip-joint, and that it never became so until inoculated with the pyogenic germs. It began he thought usually as a simple inflammation, then became tubercular, and then purulent. He advocated early and free antiseptic incision. Reginald Sayre advocated radical measures for the removal of dead bone in all long continued cases. Sinuses he thought would heal if all the dead bone were removed.

II.—The Treatment of Congenital Displacement of the Hip Joint.

William Adams urges the advantage of recumbency and extension in the treatment of this deformity if undertaken sufficiently early, say two years of age, to prevent the gradual displacement of the head of the femur by the elongation of the capsular ligament, which takes place when the child begins to walk, and throws the weight of the body upon the limb or limbs in which the congenital malformation of the hip joint with imperfect development of the acetabulum exists. For this purpose he uses an extension couch which allows of easy carriage. This recumbency is dictated to one and a half to two years. At the end of this period an apparatus is applied which admits of motion at the hip and includes traction. This is used for about six or twelve months. For those cases where both hips are involved the square saddle go-cart, as advised by Dr. B. Brown, is employed. At the end of the second stage the patient begins to walk in the ordinary way without instrumental assistance, but at the commencement crutches should be used, or the nurse should assist by holding the patient under the arms to prevent the whole body being thrown upon the limbs. If case is older, say five or ten years, with confirmed displacement, the same treatment should be carried out in order to allow the elongated upper portion of the capsule to contract. If the child is still older the author's subcutaneous osteotomy should be invoked.

III.—Surgical Operation for the Relief of Paralysis in Pott's Disease.

Drs. Bullard and Burrell, Boston, have contributed a useful paper on this subject. They hold compression to be usually produced in caries of the vertebræ either by the collection and accumulation of inflammatory products between the dura mater and the bone, and by the thickening of this membrane with an increase of fibrous or connective

tissue formation, or by the direct pressure of displaced bone. The first cause they think is most common. They believe that compression once produced does not often materially diminish, and that the improvement in the symptoms which so frequently occur is due principally to the adaptation of the cord to its surroundings; in a certain number of cases the compression may be more or less acute, and may diminish or disappear spontaneously; such cases are connected with abscess formation. Apart from general surgical conditions there are three elements especially to be weighed in determining the advisability of operative procedure. First, the actual condition of the spinal cord; secondly, its prospects of recovery of function if not operated upon; thirdly, its prospects of recovery if the pressure be removed.

(*a*,) *Actual Condition of Cord.*—The principal factors to be considered in this connection are: (1,) Degree of pressure; (2,) The time throughout which it has been exerted; (3,) The liability of the cord to inflammation or degeneration. The symptoms to be principally relied upon are the loss of motion and of sensation, and the condition of the reflexes below the diseased area. The greater the loss of motion and sensation the greater the obstruction or destruction of cord conduction. The inhibition or destruction of the conduction of the cord is not proportional to the amount and duration of the compression. The possibility of spontaneous myelitis must be remembered.

(*b*,) *Prospect of Recovery without Operation.*—The prospect of partial recovery is in the majority of cases good. Even cases of complete paraplegia partially recover. This may occur even if paralysis has continued for years. So long as we have reasonable or even moderate chances of recovery without operation, the authors do not believe it advisable or justifiable in the present condition of spinal surgery to perform so serious an operation as resection of the vertebræ.

(*c*,) *Prospect of Recovery by Operative Removal of Compression.*—The authors sum up as contra-indications: (1,) General health and general surgical considerations; (2,) The presence of tuberculosis in other parts of the body; (3,) The presence of abscess in connection with the caries that can otherwise be evacuated; (4,) Acute exacerbation of symptoms referable to the cord and not threatening life.

The operative indications are: (1,) General favourable surroundings; (2,) When the disease is gradually progressing to an unfavourable termination; (3,) When the paralytic conditions are severe and sufficiently long continued to render spontaneous recovery improbable, but not so long as to have produced permanent destruction of the cord; (4,) When acute symptoms threatening life appear which may be relieved by operative procedures.

IV.—Lateral Deviation of Spine in Pott's Disease.

Dr. R. W. Lovett, of Boston, has written a thoughtful paper on this subject, wherein he asserts that lateral deviation of the spine is exceedingly common as a symptom of caries. Cervical disease showed the least characteristic deformity. This deviation is best noted by examining the child from the front where the outline is sharper and more definite. It essentially differs from rotary lateral curvature. The whole aspect of the trunk is different. It has not so much the look of a sinuous distortion as of a distinct leaning of the body to one side or the other. The deviation is more often to the right. Thirty cases were examined and deviation found in twenty-nine. In no case was it more than eight degrees from the perpendicular. It did not follow the same rule as in scoliosis, that is, rotating backwards on the side of the convexity of the curve. In a third of the cases it rotated in the other direction. Lateral deviation is for the most part a symptom of muscular irritation reflex to the joint inflammation, and belongs to the same class as the malpositions of the other diseased joints. It yields readily to treatment, and is most rapidly reduced by rest in bed and spinal extension.

V.—Growth Rate of the Body in Relation to the Processes of Rectification of Deformity.

Walter Pye delivered three instructive lectures on this subject, the result of very patient and exhaustive enquiry. They deserve careful attention, and cannot be summarized. Mr. Pye finds that children which furnish the patients to the Western London Hospitals are not different in their growth, stature, and general development from the children of the fairly well-to-do lower and middle classes among whom they live. From the ages of two to eight the increase of stature of the hospital class is 14·4 inches. The increase during the same period of the most favoured classes is 16·9 inches. The most rapid increase in stature takes place during the first five years of life, not only relatively but absolutely, and that this growth is not notably different in the two sexes ; that for the next four or five years boys grow faster than girls ; that girls from twelve to fourteen are usually taller and grow faster than boys of that age, but that this advantage ceases upon the establishment of complete puberty, which is usually about two years later in the male, so that by the sixteenth year the male has generally caught up and passed the female. He agrees with Bowditch in assuming that this is the effect of an antagonism between the processes of growth and the development of the capacity for reproduction. The period of greatest increase is in the first year when it averages seven and three quarter inches ; in the second year about four inches ; and

thenceforward it gradually declines to about one and three quarter inches at twelve years. During the whole period of growth the lower extremities increase in length to five times their original measurement; the trunk trebles it, the head and neck double it. With regard to the growth rate in the limbs at different ages another interesting feature is considered, namely, the part which the diaphysis plays in the production of the normal increase of bone. That there must be some interstitial growth is generally allowed, but its amount has been considered insignificant in comparison to the much more rapid growth in the vicinity of the epiphysis. Pye experimented on dogs, and the results are briefly these. Three animals were operated on with consistent results. In the limbs of half grown dogs of the terrier type the total increase in the length of the long bones may be estimated at one tenth of their whole length in three months. Four fifths of this increase takes place at the epiphysis, one fifth in the body of the shaft.

VI.—Dupuytren's Finger Contraction.

Mr. Adams read a paper at the Medical Society upon this subject. He still believed in the gouty thickening of the palmar fascia. He also adhered to the subcutaneous operation which he had practised for many years, viz: the subcutaneous division of the contracted bands of fascia that could be detected by as many punctures as might be necessary; this should be followed by immediate extension, or extension as rapidly as it could be followed without causing pain. He thought the open wound method totally inapplicable to phalangeal contractions, and if relapse followed this operation the case became hopeless. In one case of this kind Mr. Macready was obliged to amputate the little finger. The subcutaneous operation could be always readily repeated. Mechanical extension should be maintained for three weeks night and day, allowing only a little passive movement. The splint should then be discontinued during the day, but maintained at night for several months by a simple form of retention.

Mr. Macready in comparing the open and subcutaneous operations drew attention to the generally urged reasons against the subcutaneous section. These were: (*a*,) That the fascia is left behind; (*b*,) Its inability to correct the gouty deformity of joints; (*c*,) The impossibility of dividing the bands if they have undergone calcareous degeneration; (*d*,) The difficulty of operation. Against this the writer urges that no operation will restore the functions of a gouty joint. Should he meet with calcareous degeneration he would excise it. The Kocher dissection is certainly simpler. The subcutaneous incision is much safer, and can be performed at any age, and produces no constitutional disturbance.

VII.—The Nature and Treatment of Flat Foot.

Mr. T. S. Ellis formulates in a series of propositions his views on flat foot: (1,) The foot is supported not only in but also by the exercise of its functions. The muscles which by action move in action sustain the structure. In early life they also develop the form; (2,) Ligaments are insufficient to resist the tension when continuous or prolonged. Intermittent tension promotes their strength; (3,) Muscles developed by action tend to remain taut and firm when not in action, and so by keeping up continuous pressure modify the bony contours; (4,) As failure of muscular support tends to deformity from yielding of ligaments, so a renewal of it in specially active degrees will renew the form; (5,) In good walking the heel is raised from the ground by the calf muscles and by the long flexors acting with the peronei and tibialis posticus at the same time; (6,) While the long flexor muscles press the toes against the ground, they tend to lift up the heads of the metatarsal bones forming the antithenar pillar of the arch, which thus dance, so to speak, on tight ropes. Injurious pressure against the ground is thus prevented when the weight is borne by the antithenar pillar only; (7,) This same action relieves all strain on the ligaments beneath the tarsus while drawing the two pillars towards each other and throwing the arch upwards, just as tightening the bowstring increases the bending of the bow; (8,) In flat-foot the indication is to promote this bowstring or tie-rod action by vigorously springing to tip-toe, both as a special exercise and in walking. Avoidance of continuous strain on the ligaments, as in careless standing, is also indicated; (9,) While frequent rising to tip-toe during any necessary standing is desirable, prolonged standing even in the tip-toe position is not desirable. In this latter case the muscles are wearied by continuous contraction and the ligaments lose the benefit of intermittent tension. It is the act, the movement of rising to tip-toe, which is beneficial; (10,) As in order to have free movement upwards, the heel must first completely descend to the ground, heels to the boots should be avoided: (11,) The mechanism of the foot is best adapted for a level surface. The sole of the foot, therefore, must not be thickened on the inner side, as is sometimes advised; (12,) As the free bending of the foot necessary for efficient function takes place only, or mainly, at the oblique line of the metatarsophalangeal joints, a thick sole is altogether inadmissible; (13,) The short flexor muscles, acting with the abductors and adductors play an important part in holding down the proximal phalanx of the first and middle phalanx of each of the smaller toes, while the long flexors act on the terminal phalanges; (14,) The principal object of the arch being to protect these sole muscles from pressure, steel springs,

cork or other pads, which press against them are to be scrupulously avoided; (15,) The great toe having its natural plane of movement obliquely downwards and inwards—away from the others—it is important that all interference with this lateral movement should be avoided, otherwise the action of its flexors may be suspended; (16,) In such case the bowstring or tie rod effect of the action of the long flexor on the tarsal arch is lost. In this regard proper socks are nearly as important as proper boots; (17,) As the arch is most pronounced and best adapted to sustain weight, and as the muscles for raising the heel and pressing down the toes act best when the toes are directed slightly inwards, the toes should never be turned outwards in standing or in walking; (18,) Free movement of the feet being impossible when the body rests on their outer edges, standing or walking in that position is not to be permitted; (19,) As muscles when tired tend to as little action as possible, and so to throw extra strain on the ligaments, all fatigue is to be avoided; (20,) Inspiration, straightening of the spine and knee, throwing of the arms upwards, and of the head backwards, are all of them movements instinctively associated with the act of rising to extreme tip-toe. All these tend to throw the body, as a whole into good position. Therefore, any exercise or form of work which involves springing upwards with every inspiration, coming downwards with every expiration—such as wood-cutting,—should be encouraged. All exercise or work which involves continuous effort—such as holding up weights—is to be avoided, especially if it involve the squatting position.

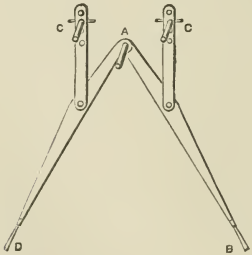

Fig. 41.

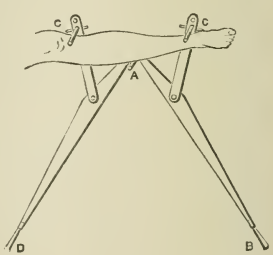

Fig. 42.

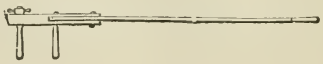

Fig. 43.

H. O. Thomas has introduced an osteoclast, which has the merits of portability, simplicity, and rapidity. The accompanying diagrams explain its action. The fracture is brought about by the approximation of the long lever handles which push forward the pillar A, *Fig.* 41. The pillars C, C, *Fig.* 41, are movable, so that they may grasp the further aspect of the limb wherever wanted. The handle B, *Fig.* 42, must be brought towards handle D, when it is towards the terminal aspect of the limb. The leg should be protected; the fracture pillars are covered with india-rubber.

REFERENCES.—"Brit. Med. Journal," Feb. 22, 1890; "New York Med. Journal," Oct. 5, 1890; "Lancet," July 26, Aug. 16, Aug. 31, 1890; Ibid., March 29, 1890; "Boston Med. and Surg. Journal," Oct. 9, 1890.

OZÆNA. (See "Rhinitis.")

Synopsis.—(Vol. 1890, p. 389.) Thorough cleansing of the nasal passages and naso-pharynx by syringing or spraying; **Sanitas Fluid**, 1 in 20 or 30, is the best deodorant; swabbing out the nose with **Camphorated Naphthol** in **Vaseline** after removal of inspissated crusts, and then inserting a tampon soaked in the following, ℞ Naphthol 12 parts, Tr. Quillaiæ 88 parts, Aq. Dest. 400 parts; this tampon is left in for fifteen minutes; **Chlorate of Potash**, 1 in 30, is useful, also **Glycerine** 25%.

PAIN (Treatment of in Abdominal disease).

Synopsis.—(Vol. 1889, p. 371.) **Codeine**, gr. j, in a teaspoonful of syrup, and repeated every two or three hours, or in pill (gr. ss, with **Ext. Gentianæ**, t.d., and increased to j grain) in malignant disease. **Conium Ointment** in rectal pain, vaginismus and hæmorrhoids, and in cases of fissure add **Fer. Persulph.**, grs. x or xij to **Ung. Conii**, ʒj.

PANCREAS (Surgery of). *A. W. Mayo Robson, F.R.C.S.*

Dr. Rugge reports a case of partial removal of the pancreas for cancer, in a woman æt. fifty, who came under treatment for gastric symptoms, loss of appetite, constipation, and pain radiating from the epigastrium in all directions. On examination, the author found a tumour between the umbilicus and left hypocondrium, hard, resistant and somewhat movable. The diagnosis was arrived at of a retro-peritoneal sarcoma. Laparotomy was performed, and the removal of the growth undertaken, a procedure which was by no means easy owing to the numerous adhesions which had formed. The growth was found to be pancreas, the seat of primary carcinoma. The patient made a rapid recovery.

In the "Centralblatt. f. Klin. Med.," Feb. 1, 1890, Minkowski gives the result of further experiments, on the effects of partial extirpation of the pancreas in dogs. After partial extirpation, as a rule diabetes mellitus does not appear, even when the remaining portion is no longer connected with the intestine. Still, these remaining portions must not

be too small. In two cases in which the remaining pieces of the pancreas had only a twelfth or a fifteenth of the size of the normal organ, diabetes mellitus in its severest form was observed, similar to the diabetes after total extirpation. It is doubtful in these cases whether the remaining portions retained their functions.

Saccharine diabetes was long ago referred to disease of the pancreas; and although the relationship was disproved in the course of time in the majority of cases, yet there have always been some in which this organ has been found more or less obviously altered, a condition of cirrhosis and of fatty degeneration being perhaps the most frequent lesions met with. That the pancreas has something to do with the destruction of sugar in the blood, seems to follow from the researches on dogs, recently undertaken by M. Lepine, who recognizes the existence of a "pancreatic diabetes" and refers it to an insufficiency of fermentation.

Mr. F. Treves reports a case of operation for cyst of the pancreas. In a former edition of the "Medical Annual," we noticed Dr. Senn's valuable monograph on the subject, wherein he recorded eleven cases.

Since 1887 a considerable number of cases have been placed on record, and upon a study of these the following general account of the features of the disease may be based. The trouble would appear to be more frequently met with in men than in women, and to be distinctly an affection of middle life. The average age is about thirty-six. The youngest patient, so far as the recorded cases at present stand, was sixteen, the oldest seventy-two. In the matter of etiology there is little to be said. In the majority of cases the trouble appeared without apparent cause. In a few examples the cyst made its appearance within a comparatively short time of the receipt of an injury. In one case at least the trouble seems to have followed an attack of "acute gastro-enteritis." In the majority of cases the symptoms, apart from the appearance of the growth, have been almost negative. The tumour has usually increased rapidly, and the chief complaints have been of a painful sense of fulness after food, of distension, of digestive disturbances, and possibly of nausea. Eructations are common, and the patients are usually described as languid, feeble, or depressed. Emaciation to any extent is seldom present; vomiting is comparatively rare. In Dr. Bull's case there was hæmorrhage from the stomach and bowel. The pain complained of has usually been slight and of a vague neuralgic character. The appearance of the cyst has been preceded by periodic attacks of pain, or by a long-standing sense of discomfort in the epigastrium. The bowels have in most of the examples acted regularly. Diarrhœa is

mentioned in many instances, but in no case do fatty stools appear to have been passed. Albumen or sugar in the urine is noted in not a few examples. There is no ascites, and, as a rule, no jaundice. The skin is usually described as dusky, dirty, earthy, unhealthy looking, or yellowish. The tumour is round and tense. It is elastic, and may not give a sense of fluctuation. It is of clear outline, often presents aortic impulse, but is usually not movable. Adhesions are quite uncommon. It is situated above the umbilicus in the epigrastic region. It may be in close contact with the liver; it may be large enough to fill the whole abdomen. The fluid is usually turbid, brownish, odourless, and of fairly high specific gravity. It is alkaline or neutral in reaction, contains albumen, but neither bile nor urea. It has the power of emulsifying fat and of converting starch into sugar. In many cases it has caused the skin about the wound to be very sore and raw, and it has been described as "digesting the skin." The brownish colour of the fluid is due to an admixture of blood, and in the rarer cases the fluid has exhibited lighter tints, and has been described as yellow, and even as white. It appears to be always turbid. It may possess no digestive properties, just as the fluid in hydronephrosis may possess few, if any, of the specific features of urine.

Mr. Treves has collected twenty-four cases of cyst of the pancreas, which may be arranged thus :—

	No. of Cases.	Recoveries.	Deaths.
Incision and Drainage...	16	15	1
Removal or Attempted Removal ...	6	1	5
Simple Tapping	2	—	2
	24	16	8

This list clearly proves that the correct method of treatment is by incision and drainage.

REFERENCES.—"Med. Press," p. 337, 1890; "Minkowski Central f. Klin. Med." Feb. 1, 1890; "Lepinè Lyon Médicale, Jan. 19, 1890; "Lancet," Sept. 25, 1890.

PARALYSIS.

Synopsis.—(Vol. 1889, p. 374.) **Salol** in cystitis due to myelitis. In locomotor ataxia inunctions of **Mercurial Ointment** (5j daily) if due to syphilis, following this by **Pot. Iodid.**, grs. v to xv thrice daily, adding **Ext. Belladon.** ·05 gramme. After this the use of Nauheim and Tölz mineral springs. In non-specific cases, **Nitrate of Silver**; for pains, **Antipyrin** hypodermically; for inco-ordination, **Salicylate of Physostigmine** (gr. $\frac{1}{3}$, aq. 5iij, and inject about gr. $\frac{1}{2}\frac{1}{0}$). Saline baths for torpid cases. If patients cannot leave home, use warm bran, or weak sulphur baths (1 to 3 pounds of **Bran** boiled with 1 or $1\frac{1}{2}$ gallons of water and added to

the water of the bath, or **Sulphate of Potassium**, 1½ to 3½ oz. for one bath, or the same quantity **Subsulphate of Soda** with an ounce of **Vinegar**). **Theine**, grs. iij hypodermically along spine to relieve pain, or **Antifebrin** in gr. xxx as maximum dose; grs. vij as average dose given with wine. **Hyoscin**, gr. $\frac{1}{3\,2\,0}$ to $\frac{1}{1\,0\,0}$ hypodermically, controls movements (p. 45).

PARALYSIS OF THE INSANE.

Graeme M. Hammond, M.D., New York.

Dr. F. Clage Shaw, recognizing the hopelessness of remedies to stay the progress of general paresis, was led to consider the advisability of trying surgical interference at an early stage of the disease. The patient was seen in consultation with Dr. Ferrier, and it was agreed that dementia of the paralytic form was rapidly approaching. The patient was trephined on the right side of the skull over the central sulcus, and about two inches outside of the longitudinal fissure. Two holes were made, and the intervening bone was cut away so as to make an opening one and a half inches long by three quarters of an inch wide, cutting out the dura mater, and letting out a considerable quantity of subarachnoid fluid. With the exception of a little tingling in the fingers of the left hand there were no cerebral symptoms. Marked improvement in the mental symptoms followed. All signs of exaltation disappeared together with the convulsive attacks; his headaches vanished, he could eat and sleep well, and was able to hold his urine. The man could no longer be considered insane.

REFERENCE.—"British Med. Jour.," p. 1090, Nov. 16, 1889.

PARANEPHRIC CYSTS. *A. W. Mayo Robson, F.R.C.S.*

It is proper that the class of cysts under consideration, which heretofore may have been classed with hydronephrosis of the common type, should be differentiated clinically and anatomically, and with a view to giving a suitable position to the disease, the history of two cases is related by Dr. Robert Abbe, in the "New York Med. Jour." for Aug. 9, 1890. These two cases were extremely puzzling until laparotomy cleared up their nature.

Fig. 44.

In the first case, a lady of forty-eight years had a tumour with four years' history, and no apparent cause, situated in the position shown in the diagram (Fig. 44).

On opening the abdomen the cyst was discovered originating about the left kidney, the kidney being flattened out against the loin, but not distended. This was evacuated and drained through a lumbar

incision, and the patient made a speedy recovery, but no urine ever passed through the wound.

The second case was that of a man aged twenty-three, the site of whose tumour is shown in the second diagram (Fig. 45). In this case, although there was some pain in the right hypochondrium, there were neither liver nor kidney symptoms. This was explored by an anterior incision, and the tumour was found to spring from the front of the right kidney, the lower end of which was rounded, smooth, and normal, the rest of its surface being not quite so even, and spread out into four flattened lobulations. In this case the tumour was drained from the front, about two pints of fluid escaping. The patient made an uninterrupted recovery.

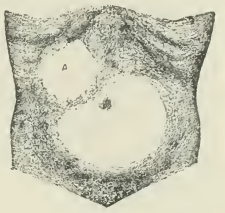

Fig. 45.

The retention cysts of the renal cortex resulting from fibrous change in granular kidney are usually multiple and rarely attain much size. They are bilateral also. Congenital cysts are very rare, and due to cystic degeneration of rudimentary tubes. The kidney substance is not left in bulk, as in the cases narrated, but attenuated or wanting, and the victims of this deformity are apt to have other deformities and die in infancy. Simple cysts and paranephric cysts, however, are of a class by themselves, that directly concern the surgeon by their rarity and importance.

This uncertainty as to origin entitles such tumours as have been described to the name of paranephric cysts, *resting upon* the kidney, there being no evidence that they arise within the cortex. The recorded cases are not very numerous. They have been known to grow to larger proportions than the first one mentioned, and to have been mistaken for ovarian tumours. This seems extremely easy to do if one regards the shape and fluctuation of the tumour and the appearance of the patient. If an early history of growth in the ilio-hypochondriac region can be elicited, or if the physical examination reveals a course of the intestine over its surface, such as the colon took in one case under consideration, it would give a strong point toward differential diagnosis. In the second case the relation of the colon was also of interest, it being pushed down and in front of the tumour. This is perhaps one of the best points for diagnosis, that the colon is usually in front of a renal tumour.

The successful treatment of all serous cysts by incision and drainage makes it probable that no other treatment would have been more

successful or less dangerous in these cases. The first case of large cyst shows that a lumbar incision without guidance from within would have probably penetrated the peritoneal sac before entering the cyst, on account of the persistent reflection of the peritoneum close to the kidney, in spite of the fact that the colon had been raised to the surface of the cyst. Exploratory aspiration also would have allowed the muddy cholesterin fluid to empty somewhat into the peritoneum if puncture had been made anywhere but close to the kidney.

PAROXYSMAL SNEEZING. (See "Hay-Fever.")

PEDICULI PUBIS (Removal of).

Synopsis.—(Vol. 1890, p. 392.) A single application of **Ether Spray** is useful.

PEMPHIGUS.

Synopsis.—(Vol. 1889, p. 377.) **Arsenic** in increasing doses. **Quinine, Ol. Morrh.** or **Iron,** with good diet. *Locally:* **Simple Ointment, Calamine Lotion, Dusting Powder, Oleate of Zinc** or **Boracic Ointment.**

PERITONITIS (Medical Treatment of).

Synopsis.—(Vol. 1889, p. 377.) ℞ Magnes. Sulph., Sod. Sulph., āā ʒss; Tinc. Belladon., ♏x, 4tus hor., after Belladonna and Opium failed, proved successful. **Salines** used early when vomiting and abdominal distension follow operations. **Codeia** or **Belladonna** as sedatives, but if these fail irrigation and drainage may have to be resorted to. In perforative forms with pulseless and collapsed condition, inject **Atropine** and **Morphia,** and irrigate with hot **Boracic Lotion** and drain as soon as the operation can be borne.

(Vol. 1890, p. 399.) **Rest;** liquid diet with meat juices as well as milk; **Opium,** gr. ¼, with **Ext. Belladonn.,** $\frac{1}{12}$, every two hours, and if pain is unchecked, give **Opium,** gr. j, as a suppository twice during the twenty-four hours; injection of half to a pint of **Warm Water** may be used daily. As an aperient later on, ℞ Ext. Belladonn. gr. $\frac{1}{12}$, Ext. Nuc. Vom. gr. ½. Aloe Pulv. gr. ½ or ⅛, Rhei gr. ½ to j, M.; Ft. Pil.; to be used once or twice in twenty-four hours and to be stopped if pain comes on; Garrod's **Compound Sulphur Lozenge** or equal parts of **Confections of Sulphur** and **Senna** may be used as aperients. Some recommend large doses of **Salines** without opium.

PERITONITIS (Surgical Treatment of). *A. W. Mayo Robson, F.R.C.S.*

The surgical treatment of peritonitis may be considered from two standpoints; first, the means adopted to prevent it, and secondly, the measures undertaken for its cure.

Although during the past year nothing new has been advanced, the subject has been elucidated by observations, the result of experience, and by the perfecting of methods previously known.

Of the means taken to prevent peritonitis antiseptic treatment in the mind of most surgeons takes the first place, and in one form or another antiseptic measures are adopted by nearly all successful operators.

In an address delivered by Mr. Lawson Tait, and published in the "Brit. Med. Jour," Sept. 27th, 1890, is found the following passage :— "Lister's view was, 'Keep out the germ, and you may leave blood-clot (and other matters) to take care of themselves.' My view was, and is, 'Get out all decomposable matter, and you can let the germs in freely.'"

Mr. Erichsen, in a letter published in the "Brit. Med. Jour." for Oct. 4th, 1890," seems to put the matter very tersely as follows :—"Does not the difference in opinion and the equality of success in practice of Mr. Lawson Tait and the Listerians admit of easy explanation? Is it not this? Septic infection is the result of traumatic putrefaction. For traumatic putrefaction two elements are necessary : (1,) putrescible material ; and (2,) a ferment or infective germ. If either be absent no putrefaction can occur, and no infection result. Mr. Tait removes the putrescible material, coagula, and shreds of dead tissue by flushing and drainage ; the ferment, having then no pabulum, may be freely admitted with impunity. Sir Joseph Lister excludes the ferment by filtration of the air and by germicides, and this practically sterilizes the putrescible material, if any be left in the wound.

In a discussion at the Medical Society of London, published in the "Lancet" for April 19th, 1890, on the "Present Position of Abdominal Surgery," which was opened by Mr. Meredith, the whole subject was very freely discussed. Our own views are there stated at length.

An important monograph on "Flushing the Peritoneum," by Dr. Delbet, appeared in the "Annales de Gyn. et d'Obstet.," Sept., 1889. The following is a summary of Dr. Delbet's conclusions :—

(1,) When the peritoneal cavity is washed out, after the fashion practised by ovariotomists, etc., the liquid spreads over the entire surface of the peritoneum, including the flanks, iliac fossæ, under-surface of the liver, and the diaphragm. This fact was proved by flushing the peritoneum of a dead subject with water containing a dye. Hence, should the surgeon object to leave much fluid behind he must dry with sponges the distant parts of the peritoneum above indicated as well as Douglas's pouch. The danger of diffusing septic matter generated in pelvic organs is evident.

(2,) Flushing the peritoneum cannot completely remove foreign bodies. Noxious fluids are removed by displacement till little, if any, of their noxious dissolved principles remain in the peritoneal cavity ; but solid matter, even in fine division, cannot be thoroughly displaced, as Dr. Delbet has proved by some delicate researches. Still, large clots and masses of cyst-contents are easily removed by flushing, and that process can at least dislodge so much solid matter that the little inevitably left behind is hardly sufficient to do any harm.

(3,) A certain amount of fluid always remains in the pelvis, iliac fossæ, and flanks after flushing carried out in the fashion practised by specialists. This fact involves a caution already suggested after the first of Dr. Delbet's conclusions.

(4,) Flushing the peritoneum with water of a temperature of from 18° to 50°C. (64°·4 to 122°F.) has little or no effect on the respiration and the circulation. "Il n'expose à aucun danger de ce côté." This statement might be seriously misunderstood. Hence, Dr. Delbet is careful to add that, though flushing with relatively cold water may produce no marked physiological effect on the circulation or respiration, it may be nevertheless very dangerous. It must chill the intestine, and that greatly increases shock. Polaillon's cases are obscure; the two which recovered from the shock following flushing of the peritoneum were reported without details. The fatal case, in Dr. Delbet's opinion, might have died from the effects of chloroform or carbolic acid poisoning. It is best that the temperature of the water be 38° to 39° C. (100°·4 to 102°·2 F.).

(5,) The hæmostatic action of flushing with water at a high temperature appears doubtful, judging from Dr. Delbet's experiments. Flushing may possibly arrest bleeding by favouring coagulation, and by causing contraction of the plain muscular fibres in the vessels and tissues touched by the hot water. These effects were, however, not observed in Dr. Delbet's experiments.

(6,) A considerable quantity of water is absorbed during the first few minutes after the flushing has commenced. When a solution of 7 parts of table-salt to 1,000 parts of water is employed, true indirect transfusion occurs. Pus and fæcal or putrid matter should be removed before flushing, lest they should cause absorption of septic material.

(7,) Experiments show that the peritoneum can be washed with toxic solutions without danger of poisoning the patient. The toxic flushing must be preceded by ten minutes' flushing with the salt solution above mentioned, and followed by a third flushing, the salt solution being employed again. In this way all excess of the poisonous material will be removed from the peritoneum. Dr. Delbet bases the above conclusion on experiments made on dogs, sulphate of strychnine being used. He suggests that carbolic acid and other poisonous antiseptic agents might thus be employed to destroy local sepsis without danger through absorption into the blood. The phenomenon in question apparently depends on the fact that the blood is hydrated to such an extent by the first flushing that it cannot absorb any of the poison in the fluid used for the second flushing. Altogether, Dr. Delbet believes

that flushing the peritoneum is most valuable in peritoneal surgery, and free from any serious danger.

Another paper by the same author appeared in the same journal for February and March, 1890, on drainage of the peritoneum, which gives the results of numerous experiments performed on the lower animals with a view to elucidate the efficiency of drainage by ordinary methods. The author concludes by saying : "That the only method of drainage which permits evacuation of fluids during the first hours after operation is capillary drainage. That all the drains are rapidly surrounded by adhesions which render extraperitoneal the tissue about them. This is perhaps the reason for their efficiency."

An unusual case of pneumo-peritonitis is reported by Dr. Studsgoard, in the "Hospitals Tidende," No. 22, 1889, which occurred sixteen days after a hysterectomy, when symptoms of incarceration of a small crural hernia occurred. The hernia sac was opened, when a large quantity of odourless air escaped from the abdominal cavity. The patient afterwards left the hospital well.

A valuable paper on "The Importance of the Practice of Washing out the Abdominal Cavity as a means of Securing a Natural Disposition of the Intestines after an Abdominal Section," by Dr. Malcolm, appeared in the "Lancet," Jan. 11th, 1890. The paper is concluded by the following remarks :—

"I am led to publish these remarks because a largely increased experience of abdominal surgery tends more and more to convince me of the extreme importance of securing a natural disposition of the intestines after an operation involving interference with the peritoneum, so that the lumen of the gut may be as free as possible, and there may be no increase of opposition to the weakened peristaltic contractions. This is desirable, not only to secure the immediate recovery of the patient, but also to prevent after trouble, for there can be no doubt that the difficulties with the bowels, the constant or intermittent pains and other unsatisfactory conditions which sometimes arise in patients who have undergone an abdominal section are not unfrequently due to peritoneal adhesions fixing the intestines in unnatural positions."

That peritonitis may be absolutely prevented by thoroughly flushing the peritoneum is proved by cases reported by Mr. Harrison Cripps, in the "Brit. Med. Jour.," March 1st, 1890, and by Mr. Bruce Clarke, in the "Lancet," June 7th, 1890.

Of the measures undertaken for the cure of peritonitis, laparotomy, combined with drainage and washing out, take the chief place. During the past year we have had several successful cases, not yet published,

of complete cures in suppurative, tubercular and localized peritonitis. We can, therefore, with confidence endorse the views expressed by Prof. König at the Berlin Med. Congress, and published in the "Centralblatt. f. Chir.," No. 35, p. 658.

Prof. König stated that he had collected one hundred and thirty-one cases, fourteen of which he had operated on himself. Of the one hundred and thirty-one, one hundred and twenty occurred in women, and only eleven in men. This experience is very different to what is usually found in the post-mortem room. Thus, out of eighty-nine dying of tubercular peritonitis, only eighteen were women. Prof. König points out that the probable reason is that women are more likely to be operated upon by gynæcologists, for pelvic swellings, which may form a part of a tubercular peritonitis. Only 3 per cent. of these cases were under twenty years of age. Out of the one hundred and thirty-one cases, one hundred and seven derived benefit from the operation. Of these, eighty-four—viz., 65 per cent.—were cured. Of these cured cases, fifty-four had been under observation for less than two years after the operation, sixteen over two years, fourteen over three years. The cure in seven of this last group of cases extended over twenty-five, fifteen, thirteen, nine, eight, seven, and six years respectively. Excluding the cases under two years, about one-fourth of the cases operated upon have been cured. Mortality (due to operation), only 3 per cent. Those who died in spite of the operation succumbed either to the continued advance of the disease, to general tuberculosis, or to pulmonary phthisis. The one thing common to the operation in all these cases was the incision through the abdominal wall, and certain manipulations within the peritoneal cavity. They may be classed thus: (1,) Exploratory incision only; (2,) Incision, and as much of the fluid let out as possible; (3,) Incision, and solid products treated variously, masses removed with sharp spoon, scissors, or knife, diseased organs (ovaries) extirpated. By all these methods a cure was to be obtained. As to washing out the abdomen with antiseptic solutions, more cases seemed to get well without it. Prof. König states that all the different forms of tubercular peritonitis are curable, whether they are effusive or dry, localized or general, or whether masses exist or not. He quotes from statistics from the Göttingen clinic. He asks the question as to whether the mode in which the disease arises has any influence upon its cure by operation—viz., as to whether the tubercle has extended to the peritoneum from disease in the neighbourhood, or been conveyed by the blood-stream. The latter class of cases is not numerous (twelve out one hundred and seventeen post-mortem cases), and Prof. König re-

gards them as curable. As to the former class of cases, it was found that out of two thousand two hundred and thirty autopsies, tubercular peritonitis was present in one hundred and nine cases, the lungs were diseased in ninety-nine cases, the pleura in sixty, the intestine in eighty, retro-peritoneal glands in forty-four, the spleen in forty, the kidney in thirty-eight, the liver in six, the supra-renals also in six. The genital organs were affected four times out of eighteen cases in women, only three times in men. Thus the intestine is often the starting-point of tubercular peritonitis. Rarely has the source of the infection been removed at the time of operation; but the scars of healed tubercular ulcers are not uncommonly found in the intestine of people dying of tubercle elsewhere, and thus in tubercular peritonitis we may allow for this. The disappearance of the tubercle after operation remains a mystery; and the author concludes by expressing the hope that by the diligent use of abdominal section in these cases, and by scientific enquiry, the mystery may yet be solved.

In the "Deutsche Med. Wochenschrift" Dr. F. Spaeth has collected six cases of tuberculosis of peritoneum in which laparotomy was performed, from the analysis of which he arrives at the following conclusions: (1,) In primary tuberculosis of the peritoneum, where none of the viscera are involved, laparotomy is a curative measure; (2,) When the pelvic organs are also affected operative interference has not resulted favourably, whether the diseased organs were removed or not; (3,) If the disease originates in the intestine operative treatment is simply palliative; (4,) When the genital tract is primarily affected the operation should be performed as early as possible. We are rarely able to make a bacteriological diagnosis in these cases; (5,) Primary bacillary tuberculosis of the peritoneum is much less frequent than has hitherto been supposed, hence the diagnosis must always be received with caution.

M. Maurange has collected statistics of seventy-one cases in which abdominal section had been performed for tuberculous peritonitis; 83 per cent. were operative successes, and of these about half were doing well one year after the operation. In many cases which afterwards died of other tubercular affections the peritoneal lesions were found completely cured. The precise way in which cure of the local affection is brought about by abdominal section is not clear; many theories have been advanced. M. Maurange maintains that the operation simply places the patient in a condition favourable for cure by unburdening the peritoneal cavity of its ascitic effusion, which is, moreover, a true cultivating fluid. The proceeding also insures antisepsis. Abdominal section is not only advisable in cases where a localized

tuberculous area exists, but also in cases where the patient's general condition grows worse, and where the disease spreads, whether ascites exists or not. Some surgeons are content to open the peritoneal cavity; others flush it with antiseptic lotions, dress it with iodoform, or drain. M. Maurange has seen good results follow a less extreme practice than abdominal section. The ascitic fluid is removed by aspiration; antiseptic washing with subsequent evacuation of the fluid follows the aspiration, and lastly variable quantities of a mixture are injected into the peritoneum. This mixture consists of 4 grammes of iodoform dissolved in 100 grammes of liquid ojl of vaseline. This injection can be safely repeated, considering the small proportion of the iodoform and the weak absorbing power of the diseased peritoneum.

In "Le Progrès Médicale," Dr. Raymondeau reports the case of a young woman, aged twenty-two, who suffered from puerperal peritonitis. Shortly after her confinement the temperature rose to 43·8 centigrade, and intra-uterine injections were administered. On the twelfth day there was pain in abdomen, diarrhœa, and loss of appetite. On the sixteenth day there was tympanites, a sense of fluctuation, pain increased by pressure, and simulation of abscess in the iliac fossa. The symptoms were so threatening that an abdominal section was performed, and the peritoneum was washed with a solution of corrosive sublimate. The patient recovered.

In the "Arch. Gen. de Méd.," Dr. Bonilly quotes six cases of puerperal peritonitis treated by laparotomy, two of which were saved. He also refers in the same paper to numerous other cases of laparotomy for septic peritonitis, and from a consideration of published cases M. Bonilly concludes that about 33 per cent. are saved, all of which would have otherwise been fatal. As to the technique of the operation, he makes a small incision, and carefully explores all parts of the abdominal cavity for encysted collections. For flushing he uses boiled water, either alone or with a slight addition of corrosive sublimate.

Dr. Gillwylie, in the "New York Med. Rec." for Feb. 1890, reports two cases of general peritonitis, one due to the bursting of a typhlitic abscess, and the other to a perforatory ulcer of the cæcum, cured by laparotomy, with irrigation and drainage. An epitome of his remarks on the treatment of general peritonitis will be found in the "Annals of Surgery" for April, 1890.

For further references to local peritonitis, see articles on "Vermiform Appendix," and "Abdominal Injuries."

REFERENCES.—"Lond. Med. Rec.," vol. i., p. 451, 1888; "Nouv. Arch. d'Obstétrique et de Gynéc.," Sept., 1890; "New York Med. Jour.," Oct. 18, 1889; "Prov. Med. Jour.," Dec. 2, 1889; "Brit. Med. Jour.,"

April 26, 1890 ; "Revue de Chirurgie," p. 765, Sept., 1889 ; "Deutsche Med. Woch.," No. 32, 1889.

PERTUSSIS. *Henry Dwight Chapin, M.D., New York.*

Dr. Gemmell has employed in the treatment of pertussis **Oubain,** an alkaloid derived from an African plant used by the natives as an arrow poison. The alkaloid is very powerful, gr. $\frac{1}{2\,6\,0\,0}$ causing death by cardiac paralysis in frogs. Its use in pertussis was first suggested by Dr. Percy Wilde, on account of its physiological action on the respiratory centres ("Med. Ann.," 1889). The author first gave the drug in doses of gr. $\frac{1}{5\,0\,0\,0}$, but soon increased the amount, and has now adopted gr. $\frac{1}{1\,0\,0\,0}$ every three hours as a proper dose for a child of five years. In this way the paroxysms were speedily reduced in number and severity, although in two unusually severe cases the dose was gradually increased to gr. $\frac{1}{2\,5\,0}$ every three hours. The author has treated forty-nine cases with the drug with twenty-five recoveries, four deaths, and the remainder still under observation. The fatal cases died from diphtheria, tubercular meningitis, capillary bronchitis, and progressive emaciation. Gemmell concludes that oubaïn is of marked benefit during all stages of the disease ; that given in the first stage it cuts short the attack ; given in the second stage it diminishes the severity of the disease, and in the third stage hastens convalescence The best form in which to give the drug is in a solution, of which one drop represents gr. $\frac{1}{1\,0\,0\,0}$ of oubaïn.

Dr. Wilhelm Manasse claims good results from the use of **Terpin Hydrate** in pertussis. He gave to children under one year old as much as 22 grains without any disturbance of the urinary or digestive apparatus. With doses of 45 grains in twenty-four hours, no albumin or blood was found in the urine. Manasse used terpin hydrate in forty-one cases, the patients ranging n age from nine months to twelve years. In general he found an improvement in the patients, with diminution of frequency and severity in the spell of coughing, in four or five days after beginning to use the remedy, when the quantity varied from about 20 to about 45 grains per day, according to the age of the child.

Dr. J. F. Purdom has found excellent results from the use of **Ergot** in pertussis. As soon as the case has been diagnosed, ext. ergot. fl. is prescribed, given in wine or brandy, if objected to in water, every two or four hours, according to the severity of the symptoms ; to a child of three months, 5 drop doses, and to older children in proportion to age. As the urgent symptoms abate either lessen the dose or extend the time, but continue the ergot until the spasmodic cough has ceased.

At the Third General Meeting of Russian Physicians at St. Peters-

burg, Dr. Semtchenko arrived at the following conclusions regarding the bacteriology of pertussis : (1,) Afanasïeff's bacterium is actually specific, and hence fully entitled to bear the name of the bacillus tussis convulsivæ ; (2,) The micro-organism makes its appearance in the sputum during the catarrhal stage, somewhere about the fourth day of the disease, but possibly still earlier ; (3,) Subsequently its numerical strength increases, the intensity of paroxysms keeping pace with the increase ; (4,) The microbes disappear from the discharge, apparently somewhat before a complete cessation of whoops (about the time when the number of paroxysms sinks down to four or two per day) ; (5,) As soon as pertussis becomes complicated with catarrhal pneumonia the bacilli in the patient's sputa show an enormous increase in number ; (6,) Altogether the pertussis pneumonia seems to be quite different from other varieties of pulmonary inflammation ; (7.) The bacillus tussis convulsivæ presents a great importance not only in etiological and diagnostic, but also in prognostic regards ; (8,) As to the behaviour of the microbe toward antiseptic agents, its vitality is destroyed as soon as the medium (jelly) contains corrosive sublimate in the proportion of 1 to 60,000, or resorcin in that of 1 to 1,200, or phenol in the same one, or hydrochlorate of quinine in that of 1 to 800. Drs. Afanasïeff's and Semtchenko's researches were repeated (at least partially) by Professor Tschamer ("Wiener Med. Wochensch.," No. 17, 1888), and Dr. E. C. Wendt, of New York ("Med. News," June 2, 1888). On the whole, both of the authors confirmed the statements made by the Russian observers. Prof. Afanasïeff considered that several points demand further elaborate investigations. It is necessary : (1,) To more closely examine the distribution of the microbes in the respiratory mucous membrane, as well as in broncho-pneumonic foci ; (2,) To study the behaviour of the bacterium toward various colouring matters (in order to discover a characteristic differential test for the bacillus) ; (3,) To study the spore-formation (which is important, especially in prophylactic regards) ; (4,) To most carefully inquire into a clinical bacteriology of the pertussis sputa, from the beginning to the end of the attack, and even during convalescence (which is important for diagnostic, prognostic, and prophylactic purposes) ; and (5,) To further study the behaviour of the bacillus toward all possible parasiticide agents (to possibly discover some specific bactericidal substances, which discovery would prove of untold value in regard to the therapeutics of the infantile scourge in question.

Dr. J. W. Farlow recommends **Resorcin** in a 2 per cent. aqueous solution, which is sprayed into the nose, pharynx, and larynx every two hours by means of compressed air. In this strength the drug is

not poisonous, and does not irritate the mucous membranes, and has practically no taste nor odour. Positive and lasting results are claimed for resorcin when used in this way.

Dr. R. S. Thomson, after studying the effects of **Chloral Hydrate, Ergot,** and **Nitric Acid** in the treatment of pertussis, sums up as follows: None of these drugs is a *specific* for whooping-cough. Ergot is absolutely useless. Nitric acid is of no use as a specific, but its well-known tonic action makes it a useful drug when combined with the other means usually employed to improve the health of children suffering from whooping-cough. Chloral hydrate is of considerable service in so far as it mitigates the violence of the paroxysmal cough and diminishes the tendency to convulsions, but it has no influence on the number of paroxysms, nor does it shorten the attack.

Dr. Löwenthal has tried **Bromoform,** as recommended by Dr. Stepp, of Nürnberg. Dr. Löwenthal says that it exerts an almost specific action upon whooping-cough, at all events, if it is used at the commencement. A hundred children were treated with it, varying in age from eight weeks to seven years. The doses given were from 2 to 5 drops three or four times a day. The liquid was simply dropped into a tablespoonful of water, and formed a bead floating in the water. The quantity dispensed at once was about a drachm. The parents were cautioned to keep the bromoform from the light, as otherwise it is liable to be decomposed. As a rule, the good effects of the medicine began to show themselves on the second or third day, the vomiting being arrested within a week after the commencement of the bromoform. In cases where complications, such as pneumonia, occurred, they ran a favourable course, and where there were relapses a return to the bromoform soon arrested the symptoms.

Dr. Naegeli has succeeded in two cases in apparently arresting the spasms of pertussis by pulling the lower jaw downward and forward. He states that the result of the procedure is not due to psychic influences, for this method succeeds even during sleep. The parents of the children may themselves employ this procedure, as it is perfectly simple and completely harmless, only it should not be done when the mouth contains food. It is stated that the regular suppression of the spasms of whooping-cough exerts a favourable influence on the progress of this disease, and by preventing the attacks it considerably reduces the mortality of this affection.

Dr. W. W. Hardwicke recommends **Oil of Eucalyptus** in the treatment of pertussis. He states that as a spray, a mixture, composed of 2 drachms of oil of eucalyptus, 2 drachms of terebene, and 1½ ounces of rectified spirit of wine, is of value. The spray may be

used half an hour before each meal and at bedtime, while internally he gives terebene in drop doses to a child from two to three years of age, in combination with 2 grains of carbonate of magnesium, and 10 minims of compound tincture of camphor to 1 or 2 teaspoonfuls of water, repeated every three hours. The two former constituents to be triturated together, the magnesium being used simply as a carriage for the terebene, which is not miscible with water. The paregoric allays the irritability of the cough until the disease succumbs to the specific treatment. Dr. Hardwicke states that in every case where the above treatment has been properly carried out it has effected cures in about a fortnight.

REFERENCES.—"Brit. Med. Jour.," April 26, 1890; "Wiener Med. Presse," March 23, 1890; "Amer. Pract. and News," April 12, 1889; "London Med. Rec.," Jan. 20, 1890; "Boston Med. and Surg. Jour.," p. 198, 1890; "Archiv. Pediatrics," June, 1890; "Berl. Klin. Woch.," June 9, 1890; "Jour. de Méd. de Paris," March 9, 1890; "Lancet," Nov. 2, 1889.

Synopsis.—(Vol. 1889, p. 381.) **Antipyrin**, grs. j to iij t.d. in very young children, raising dose to grs. xv in adults and older children. Insufflation with equal parts **Boric Acid** and **Roasted Coffee**, or **Muriate of Quinine**, iij parts, **Gum Arabic**, j part, finely powdered **Boric Acid**, grs. ij to iij 3tis hor. during the day and once during the night. **Hyoscin**, gr. $\frac{1}{300}$ to $\frac{1}{100}$ hypodermically (p. 45).

(Vol. 1890, p. 404.) **Antipyrin**; insufflations into the nasal cavity of 1 part of **Nitrate of Silver** to 10 parts of **Magnesia**. As an embrocation, ℞ Ol. Olivæ ℥iv, Ol. Succin. ℥ij, Ol. Caryoph. q.s. to scent strongly, M. From ♏xv to ℥ij to be rubbed in well according to the patient's age; the full quantity being for an adult in a day. **Phenacetin**, 6 grains in four doses of 1½ grains each for a boy three years old; for an infant, 3 grains in four doses of $\frac{3}{4}$ gr. each; **Quinine Tannate** internally, or perhaps the **Carbonide** subcutaneously.

PHARYNGITIS (Chronic). *P. Watson Williams, M.B.*

A limited experience of the use of **Trichloracetic Acid** as a local remedy in chronic congestion of the mucous membrane of the fauces, pharynx, and nose, leads us to think that it will prove of great service in these troublesome affections. This remedy was first suggested by Stein, of Moscow, and more recently advocated by Ehrman, of Heidelberg.

Trichloracetic acid (CCl_3COOH) occurs in the form of colourless, transparent, rhomboidal crystals of slightly penetrating odour, strongly caustic, soluble in water and alcohol, and rapidly becoming fluid when exposed to the air.

Ehrman's experience embraces one hundred and forty cases of chronic inflammations and hypertrophied conditions of various parts

in the neighbourhood of the nose and pharynx. Of these, one hundred and twenty-two cases were permanently cured. His method of application consists in applying a moist crystal of this acid by means of a silver probe, and rubbing it over the part which it is desired to cauterize. At first he employed an ordinary silver probe, later on he made use of a silver sound, of which the head was hollowed out in front, thus forming a cup-shaped extremity, in which a smaller or larger number of crystals might be placed. By this means accidental cauterization of healthy parts may be avoided.

When the cautery is applied to the nasal mucous membrane, a 10 per cent. solution of cocaine should first be used to deaden sensibility. Immediately after the application of this cautery a bright, ivory-white scab is formed, which remains absolutely localized to the point of application of the cautery. It differs from the slough produced by chromic acid, in that it is uniformly thick, is inodorous, produces no unsatisfactory action, and leaves no unpleasant after-effects. The effects of the cauterization have usually entirely disappeared within five or six days. The procedure may, if necessary, be repeated.

Ehrman believes that the great advantage of the method consists in the fact that it produces no inflammatory after-effects, and is in this respect preferable to the galvanic cautery, in that it is more free from the unfavourable consequences which attend the use of other cauteries; and it is especially worthy of note that in no case did its employment ever produce any secondary hæmorrhage, and, in fact, in three cases it was used with success as a hæmostatic.

When cocaine has been used, no pain, with the exception of slight burning, which passes off in a few minutes, is ever complained of.

If a mere astringent action be desired the trichloracetic acid may be dissolved in an equal weight (or in double its weight) of glycerine, with the addition of a little iodine and iodide of potassium, and the mixture used to paint the throat. This treatment proves very successful in follicular tonsillitis and chronic granular pharyngitis. Although not absolutely necessary, when the diluted acid is used for the pharynx, the previous application of cocaine is advisable.

Should the veins of the congested mucous membrane be much enlarged the galvano-cautery should be used at a previous sitting. There are, however, many cases in which the galvano-cautery is much to be preferred to the application of any cauterizing substance. The disadvantages in the use of the galvano-cautery are generally attributable to a want of skill. It should be borne in mind, said Dr. Schweig (New York Academy of Medicine, May 27, 1890), that from the first moment of the closing of the circuit there is a steady in-

crease of heat in the nasal cavity, and that scorching and interference with the integrity of the surrounding tissues become a source of menace, and that adequate protection of the contiguous structures should be secured. The apparent reaction so frequently noticed after cauterization with the galvano-cautery is, in reality, no reaction, but a scorching pure and simple, and inexcusable on account of its easy avoidance. Another cause for complaint has been the large areas of destruction remaining after the employment of the cautery, showing dry, glistening patches where the muciparous glands had been destroyed. Here is evidence of the unskilful use of a valuable therapeutic agent, as the method of subcutaneous destruction by the galvano-cautery, when properly practised, leaves the living membrane of the nose practically intact, and still completely destroys any redundant tissue that may exist. Dr. Schweig ("Med. Rec.," Jan. 22, 1886) states that he has found this method of great service in a number of cases of marked enlargement of the papillæ at the base of the tongue. In fact, it applies to all vascular growths, the destruction of which it is desired to secure without interfering with the integrity of the mucous or cutaneous surface, and without leaving any appreciable breach of surface. Too much stress cannot be laid on the advantages of this method of operating, as many dangers are avoided thereby and a clear field for operating is secured, as there is no hæmorrhage to interfere.

Dr. Handfield Jones has published reports of two remarkable cases of preacher's sore throat attended with unusual phenomena. In *Case* 1, there was abdominal pain, over-action of the bowels immediately on using the voice in public, loss of nervo-muscular energy, and occasionally bloody dejections. The patient was a healthy young man, and may be safely put down as a non-exaggerant. The pathology of his troubles may with much probability be stated as follows. His abdominal nerves and nerve-centres seemed to have lacked resisting power, much in the same way as those of certain horses noticed by Trosseau ("Clin. Med.," vol. iii., p. 101), who as soon as they have gone a mile or so, begin to sweat, and pass liquid stools. The nerve-force being diverted to the nerves and muscles of the vocalising organs the intestinal vessels were left in a *minus* condition, and consequently dilated. Thereupon active hyperæmia of the mucous membrane ensued, attended mostly, with muco-watery flux, but sometimes with escape of blood. The nerve-paresis extended, it would appear, to the splanchnics, which ceased to control the motor mechanisms of the bowels, and so excessive action took place. That the secondary phenomena were in some way dependent on the primary

overstrain of the throat and larynx is certain, inasmuch as they were almost immediately induced by exercise of these organs. It is to be remarked that though the throat was markedly red, hyperæmic, and relaxed (paretic), it was not painful. The morbid impressions produced there were not such as conditioned pain in that part, though they did at a remote part. This is a fact of the same kind as that of a tooth, itself painless, causing amaurosis of one retina, of which an interesting instance is recorded by Dr. E. L. Fox.

The pathogeny of speaker's sore throat may be briefly noticed here. "There can be no doubt that the malady commences as fatigue of the muscles and motor nerves, in fact, as a myalgia ; and this is continually maintained by repeated efforts. As muscular exertion is always attended with arterial dilatation, it necessarily occurs that the muscular paresis is soon associated with arterial paresis, and a state of active hyperæmia is established in the part. Some slight *noxa* converts this into actual inflammation, the parietal corpuscles of the vessels and the leucocytes undergoing hyperplasia, and outwandering into the tissue, where they form or exaggerate adenoid growths."

Case 2 was essentially similar, but the secondary phenomena were chiefly gastric : he had pain in the thoracic fronts such as is common in dyspepsia, pyrosis, occasional vomiting, and compulsory stooping. The relief of the pain by food was very indicative of its neurotic character.

REFERENCES.—"Wien. Med. Blatt.," Mar. 20, 1890; "Therap. Gaz.," May 15, 1890 ; "Lancet," May 24, 1890 ; "New York Med. Jour.," Aug. 16, 1890 ; "Practitioner," Jan., 1890.

Synopsis.—(Vol. 1890, p. 406.) **Bichromate of Potash Solution**, gr. j to ʒij Water, dose, ♏iij to x, in chronic pharyngeal and laryngeal catarrh ; Tinc. **Æsculus Hippocastanum**, ♏iij, every three or four hours in early stages of granular pharyngitis.

(Vol. 1889, p. 383.) Application of 20 to 30% solution of **Lactic Acid** in dry pharyngitis. Application of **Crude Pyroligneous Vinegar** in chronic hypertrophic pharyngitis. In acute tonsillitis, 5 to 10% solution of **Cocaine** relieves ; a purge is given followed by **Sod. Salicylate**, and application of **Ice-bag** or **Leiter's Cold Coil**. If suppuration is inevitable **Calcium Sulphide**, gr. $\frac{1}{10}$ to $\frac{1}{2}$ every three or four hours and poulticing assist speedy maturation. **Menthol**, 5 to 20% solution in acute pharyngitis ; 25% solution in chronic cases (p. 53). ℞ Iodine, gr. vj, Pot. Iodid., gr. xx, Aq. ʒiij, Menthol, ʒjss. Glycerine, ʒvj, M. Application in chronic pharyngitis (p. 53).

PHTHISIS. *R. Shingleton Smith, M.D.*

Ætiology.—Modern views of the ætiology of phthisis are reviewed in a recent contribution by Dr. Henry Welch. He reminds us that the value of *heredity* as a factor, considered as apart from hereditary predisposition (*i.e.*, congenital debility of tissue offering little resistance

to the infecting microbe) has been maintained by Johne, Troupe, Landouzy, and Martin. The two latter observers obtained positive results from inoculations of the blood and tissues of a fœtus of a tuberculous mother in a guinea-pig. Such results are exceptional, and the extreme rarity of tuberculous disease in infants under one year is quoted by the writer as opposed to these views.

The most generally accepted doctrine is that supported by Virchow, Koch, Orth, Woodhead, and others, viz., that *it is the vulnerability of tissue that is inherited, and not the actual disease.* Dr. Welch briefly summarizes the arguments in favour of and against the direct infective hypothesis.

(1,) *Arguments in favour*: (*a*,) The theories of infection through solutions of continuity of mucous membranes, etc., and owing to devitalization of tissue, are analogous to those accepted in respect of other specific infective diseases. Especially does the reduced vitality theory accord with the recent observations of Metschnikoff on phagocytes; (*b*,) The fact that phthisis frequently follows enteric fever, catarrhal pneumonia, and empyema with subsequent deformity of chest and fixation of lung; (*c*,) The alleged frequent occurrence of phthisis contracted by the husband, wife, or nurse of a phthisical patient; (*d*,) The possibility, proved experimentally, of communicating the disease to animals, by inoculation, or by forced inhalation of sputum-dust containing the bacilli; (*e*,) The admitted facts that the bacillus exists in the lung-tissues of consumptives, and also that the bacillus-spores exist in the sputum-dust, are, in the absence of any other feasible mode being demonstrated, inferred to be sufficient evidence of the mode of contagion.

(2,) *Arguments against the sputum-dust theory*: (*a*,) The evidence of clinical experience is such as to render its acceptance very difficult. The cases are comparatively few where even the possibility of direct infection can be alleged, and the value of these allegations is generally small; (*b*,) The experience of the Alpine health resorts. Here an enormous amount of sputum-dust must necessarily be accumulated in the air and dust of artificially warmed rooms, occupied by phthisical patients presenting prepared material in the shape of damaged lungs and the "suitable soil" of devitalized tissues, which should render re-infection absolutely certain. But the result is, on the contrary, a marked improvement in the majority of cases sent there, and an absence of contagion among the native population. The alleged active infection by sputum-dust at lower altitudes is here conspicuous by its absence; (*c*,) Dr. Troup quotes Baumgarten's experiments as proving conclusively that very large masses of bacilli must be continuously

and forcibly inhaled to produce phthisis ; (*d*,) The intimate relation of wetness of soil to the prevalence of phthisis is inexplicable on the sputum-dust hypothesis.

The researches of many observers afford something approaching positive testimony that there is "a something" as yet unexplained which forms an important factor, without which the cause of the incidence of the disease on particular localities and individuals cannot be definitely arrived at. Thus locality, conditions of soil, occupation, and altitude are some of the physical conditions often closely associated with the prevalence of phthisis. The writer refers at some length to the theory that the bacillus of tubercle is an accidental parasite.

Dr. More Madden, at the annual meeting of the British Medical Association at Birmingham, in 1890, in emphasizing the relation of the strumous diseases of children to tubercle, remarked : "The intimate connexion and relation between these conditions was pointed out nearly a quarter of a century ago in my work on 'Change of Climate.' The acute forms of tuberculosis, common during childhood, resemble the infective disease in their origin from a specific germ, whether generated in the body or introduced from without. The latter is probably the case in the tubercular diseases prevalent amongst the children of the poor in whose dietary various forms of preserved milk foods now enter largely, as it seems difficult to conceive any certain guarantee that the cows furnishing the supply may not, in some cases, suffer from *perlsucht*, this disease being very prevalent and not materially affecting the quantity of milk. More recently Professor Bollinger has shown that milk may prove infectious whether taken from cows suffering from general or local tuberculosis ; in his experiments only a few drops of undiluted milk from a tuberculous cow proved sufficient to produce miliary tuberculosis in animals. Be the pathogenesis of tuberculosis what it may, however, there can, I think, be no question as to the fact that it is most frequently developed in patients who bear in their general constitutional condition, and more especially in their glandular system, the obvious imprint of the strumous diathesis. Nor is it to be wondered at that in children, thus constitutionally enfeebled, the struggle for existence between the invading specific micro-organisms and the blood corpuscles or leucocytes should almost invariably so speedily terminate in the fatal victory of the prolific bacilli of tubercle."

Dr. Welch suggests the possibility of the discovery of a ptomaine or other product derived from the bacillus, which when inoculated will be protective without itself producing the disease. The fact that Hankin has isolated from anthrax-cultures an albumose which confers

immunity on rodents, and the results obtained by Gamaleia, who sterilized cholera-cultures which yet produced a form of the disease, killing in twenty-four hours, while a small dose was protective, are instances of the successful application of this principle of preventive inoculation to other specific diseases.

The profession and the public are anticipating with great eagerness the publication of any results which have as yet been obtained by Professor Koch, who is known to have been actively at work on this subject, and whose preliminary announcement at the Berlin Congress has excited so much attention.

TREATMENT.—Several new methods of treatment based upon the germicide powers of the drugs employed have been advocated during the past year. It is very possible that at some future date a germicide will be discovered which is capable of destroying the tubercle bacillus when introduced into the circulation, and is at the same time harmless to the human organism. Till then we must rely on general tonic treatment and hygienic measures, for "at present it may safely be said that the antibacillic treatment of phthisis is a failure. It is impossible to say why some cases get well, but that they certainly do with ordinary treatment, fresh air, cod-liver oil, tonics, and they get well just as rapidly as those treated with antiseptics."

In our article on phthisis in the "Med. Ann." for 1890 we referred at some length to beneficial results obtained from the administration of **Creasote**, and, more especially, its purified form, **Guaiacol**.

Professor Sommerbrodt, of Breslau, in two recent communications to the "Therapeutische Monatshefte," declares that an experience of over five thousand cases has proved to his own satisfaction that creasote is not merely a useful drug for the symptomatic treatment of tuberculosis, as has been conceded by others, but that it exerts a specific influence on the disease by the resistance it offers to the cultivation of tubercle bacilli. Dr. P. Guttmann had by his experiments shown that tubercle bacilli could scarcely be cultivated in sterilized serum containing $\frac{1}{4000}$ of its volume of creasote, and the culture entirely failed when the solution was a little more concentrated. He concludes that if it were only possible to administer sufficient creasote for the blood to contain that drug for some time in the proportion of $\frac{1}{4000}$ of its own quantity, tubercle bacilli would probably cease to develop. This, he contends, is impossible, not only because the required quantity of creasote in the blood would be more than 20 grains, but because it would be impossible to determine what quantity of creasote would have to be administered to make 20 grains of it circulate in the blood. Sommerbrodt believes that it is possible to give the necessary quan-

tity of creasote. He has been prescribing for some time to many hundreds of tuberculous patients capsules of creasote, each containing 1 grain of the drug. These capsules were taken, 3 the first day, and every succeeding day one more until the eighteenth day, after which the same quantity—from 20 to 25 grains per day—was continued for many months. The author says that it is impossible to presume that the 20 grains of creasote have already entirely passed out of the blood by the time the second or third dose of the drug is given, so that probably such an accumulation of creasote takes place in the tissues as to fulfil Dr. Guttmann's postulate. He has, at any rate, had the most gratifying success with this medication, and his experience was that the more creasote a patient could bear in a day the greater was this success. The *modus operandi* of the creasote, Dr. Sommerbrodt says, has not yet been sufficiently cleared up. . . . He suggests, therefore, that serum from a man who has for some time taken more than 20 grains of creasote be used to cultivate tubercle bacilli, so as to find out if this acts differently from the serum of another person used for the same purpose.

The dosage and administration of creasote have been recently commented on by Dr. Wm. H. Flint, the results of twenty-three cases having been brought before the New York Clinical Society.

For administration by mouth or rectum an emulsion was used, composed of cod-liver oil 40 parts, and mucilage of acacia 60 parts, each drachm containing 2 minims of creasote. This emulsion was given in doses corresponding to 10 or 12 minims of creasote per diem, the dose being steadily increased up to the point of toleration. If the patients could be persuaded to adopt temporarily an exclusively milk diet the creasote emulsion was administered in milk, being thoroughly mixed with the latter. The drug was also given by means of rectal injection, and by inhalation.

It was found that the best results for each individual attend the administration of the maximum quantity of creasote which the patient will bear, and if any one channel becomes intolerant another should be employed, in order not to interrupt the continuity of the treatment.

The reporter has preferred to use guaiacol as being the more definite and constant substance, and has obtained the best results from its use. It may be given in capsules, either with or without iodoform, and cod-liver oil, or in solution with some bitter tincture, such as nux vomica or gentian. The form usually adopted has been the following : —

℞ Guaiacol	℥j	Tinct. Gent. Co.	℥vij.
		M. Ft. Guttæ	

Sig. Ten drops to be taken in water three times a day *after food*.

This dose has been increased gradually to the maximum quantity of 1 drachm, the equivalent of 7½ minims of guaiacol three times daily. The cod-liver oil may be floated on the mixture, the whole being taken as one dose, when the taste of the oil is effectually concealed by the guaiacol.

A combination of guaiacol, iodoform, and maltine with cod-liver oil is another useful compound.

Professor Schnitzler has for some time past been using **Balsam of Peru** in cases of pulmonary phthisis with laryngeal lesions. It may be remembered that Landerer drew attention to the efficacy of this drug some time ago, but little has been heard of it since. It may also be remembered that the drug acts differently on tuberculosis when injected directly into the veins than when given by the mouth. Dr. Schnitzler makes a solution of olei amygdalarum, mucilago gummi arabici, and chlorate of sodium 1 to 400, and in this form injects about ·5 to 1 gramme of the drug. He advises the precaution of breaking up the oil globules every time before use, so that their dimensions are less than the blood corpuscles. The results he has obtained from this form of treatment in tuberculosis appear to be satisfactory.

The opinions expressed in regard to a new drug, **Aristol**, are so full of praise that it appears certain the drug will be given further trial. Aristol is a dithymol-diiodide, and is formed through heating a solution of potassium in potassium chlorate together with an alkaline solution of thymol, the new compound falling down as a reddish-brown amorphous precipitate. It is a fine, reddish-brown, odourless powder, is insoluble in water and glycerin, slightly soluble in alcohol, readily in ether. It is easily soluble in cod-liver oil, and can readily be taken in this way.

We have now and then given it in cases of chronic phthisis, but have not been able to trace any definite results therefrom in doses of 3 or 4 grains daily. Its odour and taste are not unpleasant, and no toxic results have been reported.

The antitubercular power of **Iodoform** has been well illustrated by Dr. Louis Pilcher, in a case of tubercular ulceration of the skin of a girl, aged thirteen, which resisted curetting and various applications, but healed rapidly after iodoform dressing was commenced. The difference in the course of two ulcers was so marked that it could not escape the most casual observation. The hygienic, constitutional, and local conditions of these ulcers were the same for each, and unusually good for both. They were treated at the same time and by the same surgeon, and the difference could only be due to the presence of iodoform dressing in the one and its absence in the other.

Salol, introduced by Sahli in 1886, the phenylic ether of salicylic acid, containing 40 per cent. of phenol and 60 per cent. of salicylic acid, has been credited with antibacillary power, and has been found to be of service in cases of intestinal tuberculosis. Its action on the kidneys has recently been investigated by Dr. Hesselbach, and the following are his conclusions: (1,) The large proportion of phenol contained in salol renders it so toxic a substance that its unrestricted therapeutic use is fraught with danger; (2,) In renal disease, acute or chronic, salol is contra-indicated.

Under these circumstances it is not desirable that the drug should be used extensively in the treatment of phthisis, and we have not seen or heard of any satisfactory results from its employment.

The hot or cold air treatment of phthisis, recently introduced by Worms and Krull are methods which must be mentioned if only to be emphatically condemned. The idea is based on the fact that the tubercle bacillus cannot withstand a temperature of 42° C. But Mosso and Rondelli have shown that the air, when inhaled even at 100° C., is not appreciably above the normal temperature of the body when it reaches the alveoli. The researches of Dr. Gilman Thompson, too, have demonstrated most clearly that neither very hot air nor cold can produce more than a slight alteration in the temperature of the lung, even when inhaled for an hour or more. Dr. Dujardin-Beaumetz, at a recent meeting of the Academy of Medicine, declared that it was important to remove the delusions concerning the treatment of phthisis by this means, that the experiments carried out by him in his hospital wards had given unsatisfactory results, and concluded that the hot air treatment is positively dangerous.

Night Sweats.—Dr. Leu has tested the action of **Camphoric Acid** on the night-sweats of phthisis. This substance, which is produced by the oxidation of camphor by acid, is only slightly soluble in water, but quite soluble in alcohol. Although it has by no means an unpleasant taste, it is better given in capsules, although it is not certainly necessary. In the author's experience this remedy was given to thirteen different individuals, in fifty-five different doses, who suffered from night-sweats, in some cases to a very severe degree. Perfect success was reported as being obtained when there was perfect dryness of the skin, and this result was obtained in 60 per cent. of the cases treated. A partial success was obtained in only 18 per cent. The average dose amounted to 30 grains of camphoric acid, although in some cases this dose was increased to 45 or even 75 grains, 35 to 45 grains being given in the evening and about 30 grains being given in the middle of the day. A remarkable fact was that sometimes the favourable influence

of the camphoric acid was not noted until the evening after its administration, while, further, the good effects persisted for several successive evenings.

REFERENCES.—"Edin. Med. Jour.," July, 1888; "Brit. Med. Jour.," 1889; "Therap. Gaz.," 1890; "New York Med. Jour.," No. 4, 1890; "Annals of Surgery," Sept., 1889; "International Jour.," Nov., 1890; "Wien. Med. Blätt.," Feb., 6, 1890; "Practitioner," March, 1890; "Therap. Gaz.," Sept. 15, 1889; "New York Med. Jour.," May 10, 1890; "Lancet," June 21, 1890.

PHTHISIS. *F. de Havilland Hall, M.D.*

There is, doubtless, a great future in store for the treatment of pulmonary affections by means of remedies injected into the larynx. The advantages of this plan of procedure are manifest. In the first place digestion is not interfered with by the medicament being introduced into the stomach. Then the remedy being injected into the larynx acts more promptly, and if, as is usually the case, it is of a volatile nature, it readily diffuses through the bronchi, and lastly, a smaller quantity of the drug will usually suffice.

Mr. Walker Downie has tried this method of treatment in tubercular laryngitis, with slight pulmonary implication, early phthisis pulmonalis, pulmonary cavity, bronchiectasis, and gangrene of the lung. Notwithstanding the fact that the cases (over forty in number) were in no wise picked cases, all, save two, expressed feelings of benefit in several ways.

Mr. Downie found **Menthol,** dissolved in olive oil of the strength of 12 per cent., with the addition of 2 per cent. of pure creasote, most useful. He has had laryngeal tubes made in vulcanite, to fit on to an ordinary hypodermic syringe, by means of which the injection can be given thoroughly and satisfactorily. These are simple tubes of equal calibre throughout, and not ending in the form of a spray. They are made in three sizes, the difference being in the size and form of the curve. These tubes can be had from the Argyle Rubber Company, Glasgow.

Method of Administration.—In the administration of the injection Mr. Downie has almost constantly employed the laryngeal mirror, by the aid of which the point of the laryngeal tube of the syringe can be accurately guided over the epiglottis and into the larynx without coming in contact with the tongue or fauces, thus obviating all risk of retching. With a little practice, however, the tube in the majority of cases can be readily inserted and the injection given without the aid of the mirror, by placing the patient before a good light, having his tongue held in the protruded position and

with the mouth widely open. Where the epiglottis is elongated and dependant, however, it will be found necessary to resort to the use of the frontal and laryngeal mirrors, and possibly the specially curved tube. The point of the syringe should go below the level of the vocal cords, and should be in that position before the fluid is injected. If this is not attended to, if the fluid is spread over the cords, the sensation produced is disagreeable, being similar to something having gone the wrong way, and the patient may be compelled to cough. If, however, the nozzle of the syringe be placed below the level of the cords, the fluid is injected directly through the larynx into the trachea, and as much as two drachms in some cases can in this way be injected without the slightest inconvenience to the patient. An ordinary hypodermic syringe holds from twenty-five to thirty minims, and in using it with the laryngeal tubes spoken of, the injection may be repeated two or three times at each sitting, thus giving roughly from a drachm to a drachm and a half. Applying it in this gradual way patients do not cough as they do if the same quantity is given at one injection by a large syringe.

Within, at most, one or two minutes of the administration of the injection, the patient experiences a warm sensation in the region of the sternum, which is soon followed by what he usually describes as a comfortable glow all over the chest. He breathes more freely, and where tightness or feeling of constriction across the chest is complained of, this is rapidly relieved by the menthol injection. There is also less inclination to cough. The freedom from the constant tickling cough which follows the injection is in many cases very marked, and more so after the first few days. Then the expectoration becomes greatly reduced in quantity and much less offensive. In several of the cases the purulent element entirely disappeared, and what little expectoration continued to be discharged resembled the frothy expectoration of simple bronchitis. There was marked increase in weight in most of the patients thus treated, the explanation of which is twofold ; (*a*) by relief from cough, sleep was less broken and thus more satisfactory, and (*b*) the organs of digestion were in no way interfered with by the means used to attain this end.

REFERENCE.—"Glasgow Med. Jour.," p. 416, Dec., 1889.

Synopsis.—(Vol. 1889, p. 386.) **Menthol** inhalations and injections in laryngeal and pulmonary forms, may be combined with **Lactic Acid** treatment. **Menthol**, 20% in **Olive Oil**, injected twice daily for about two months, using ♏v of the solution in a pint of boiling water as inhalation, or this may be dropped on cotton wool and placed over the nose or mouth, and thus dysphagia is relieved. **Ipecacuanha Wine**, pure or diluted with water, as spray in fibroid phthisis ; inhalation of **Sulphurous Acid** obtained by burning sulphur in a

room. Iodine with Liquid Vaseline, subcutaneously, lessens cough and expectoration in tuberculosis with abundant secretion. ℞ Eucalyptol. Pur., 5 parts, Vaselini Liq. Medic., 20 parts, M. ; used subcutaneously, also lessens cough and expectoration. Creasote, beginning with ♏j increased to ♏xij t.d., either in capsules, or well-diluted in lukewarm water, or combined with Tincture of Gentian, Rectified Spirit, and Extract of Coffee ; some take it in Ol. Morrh., and others with Cocoa powder. Guaiacol has been substituted for Creasote. Tolu Balsam obviates nausea and vomiting of Creasote. ℞ Pure Beech Creasote, v centigrammes, Purified Norway Pitch, Tolu Balsam, āā vijss centigrammes, M. ; to make one capsule, 4 being given daily increased to 12. Pure Terebene relieves cough and dyspnœa. Super-alimentation method of Debove is valuable if anorexia, nausea, and vomiting prevent food being taken. Phenacetin, grs. v to viij, Antipyrin, grs. x to xv are best antipyretics, given just before the time of rise of temperature ; Antifebrin, grs. iij to viij, is more liable to cause sweating. *For Night Sweats:* Zinc Oxid., grs. ij to v in pill at bedtime, or one of the mineral acids ; Arsenic, Strychnine, Quinine, Belladonna, Ext. grs. ¼ to ½, Liq. Atrop., ♏j to iv, Picrotoxin, Dover's Powder in small doses (½ gr.) at bedtime, Phosphate of Lime. *For the Cough:* Pure Terebene is specially useful if dyspnœa is great. *For Hæmoptysis:* Gallic and Tannic Acids alone or combined ; Ext. Ergot. Liq. ; Tinct. Hamamelis ; Lead Acetate ; Oil of Turpentine ; counter-irritation by a blister ; Tannic Acid has been injected into the lung itself with good results. Lamium Album. ℞ Tinc. Flor. Lamii Alb., ℥iv, Syr. Sacch., ℥ij, Aq. Dest., ℥ix, half a teaspoonful hourly (p. 51). *For Diarrhœa:* Thymol, grs. xxx daily in ijss gr. pills, two being taken at a time, or Lactic Acid may be used. The following have been recently recommended :—Acetanilide, ℞ Acetanilide, Vin. Ipecac., āā ℥j, Tinc. Lactucæ, ℥j, M. gtt. xx 3tis hor. in advanced cases with high temperature and constant cough (p. 10). Hypnone. gtt. v, inhaled every four hours, checks cough and expectoration (p. 47) ; Ol. Menth. Pip. as inhalation (p. 59) ; Strophanthus, ♏iij to vj every six hours as antipyretic (p. 68) ; Agaricin, gr. ⅛ at bedtime and repeated twice during night for night-sweats (p. 11) ; Calcium Sulphide, gr. $\frac{1}{10}$ modifies suppurative process (p. 27) ; Geranium Maculatum, grs. x to xl lessens cough (p. 42) ; Hyoscin, gr. $\frac{1}{330}$ to $\frac{1}{150}$ given hypodermically, palliative for the night-sweats (p. 46) ; Hypnone, 3 capsules at bedtime (each containing 10 centigrammes) as hypnotic (p. 47).

(Vol. 1890, p. 408.) Guaiacol: ℞ Guaiacol pur. ♏xv to xxx, Aq. Dest. ℥vj, Sp. Vin. Rect. ℥vj ; a teaspoonful to a tablespoonful two or three times a day, after food, in water. ℞ Guaiacol ℥iijss, Tr. Gentian Co. ℥j, Sp. Vin. Rect. ℥viij, Vini Xerici. q.s. ad. Oj ; Sig. A tablespoonful two or three times a day in a wineglassful of water. Perles of Creasote and Iodoform ; inhalation and internal use of Aniline with Acetanilide, giving Iron at the same time ; Myrtol, two capsules (containing 15 grammes each) every two hours ; Phenyl-Propionic and Phenyl-Acetic Acid ; Hot Air treatment ; inhalation of pulverized Biniodide of Mercury ; antiseptic inhalations from a perforated zinc inhaler, the following combinations being used, (1,) ℞ Iodoformi gr. xxiv, Creasoti ♏iv, Ol. Eucalypti ♏viij, Chloroformi ♏xlviij, Alcoholis, Ætheris āā ℥ss, M. ; (2,) ℞ Tinc. Iodi Ætherealis, Ac. Carbolici āā ℥ij, Creasoti ℥j, Sp. Vin. Rect. ad. ℥j. M. ; (3,) ℞ Creasoti ℥j, Alcoholis ad. ℥ss, M. Subcutaneously Carbolic Acid, Eucalyptol, Iodoform, Iodine, Arsenic, and Salicylic Acid have all been used, liquid Vaseline being the best diluent ; Creasote, 20 to 30% solution, in pure Oil of Cloves, injecting ♏xvj into the tissue of thigh or abdomen, and employing massage over seat of injection, and then repeating the dose ;

Guaiacol may be substituted for Creasote for subcutaneous use, one-third or one-fourth the amount being used; intra-pulmonary injections of Mercury Bichloride, Iodoform, Iodol, Creasote (the three last being dissolved in Eucalyptus Oil, or in Vaseline, or in the Camphor Carbolate), and Mercury Biniodide have been used, the last being preferred; Phenacetin in 5 gr. doses is the safest antipyretic; for night sweats, Atropine, gr. $\frac{1}{120}$ to $\frac{1}{60}$; for cough Syrup. Apomorphinæ Hydrochlorat. alone, or combined with Ipecacuanha or Squills, or with Hydrobromic Acid, Chloroform, Paregoric, and other sedatives. For hæmoptysis, Hamamelis, Hydrastis, or Iodoform have been recommended; for diarrhœa, β Naphthol, Betol, Hydra-Naphthol, and Sozo-iodol.

PHTHISIS (Climatic Treatment of).

R. Shingleton Smith, M.D.

It is universally conceded that the medicinal antiseptic treatment of bacillary phthisis is as yet not reliable, and hence the importance of the question of climate as an alternative resource. No antiseptic treatment has yet been devised which either theoretically or as a result of experience gives results which will compare favourably with the benefits reported from various climatic changes. Hence this question at once arises, What climatic change is most desirable for any given case as soon as a diagnosis has been made? Possibly medicinal treatment may be as important as climatic change *per se*, and it will often be the case that a given patient will do well to remain at home under medical supervision rather than wander abroad often beyond the range of reliable medical aid; but on the other hand early treatment is as necessary with regard to climate as with medicinal aids, and it is not fair to the climatic method or to the patient that all the numerous medicinal modes should be allowed to occupy much valuable time before the adoption of some climatic change as a last resource. The various climates in vogue for the treatment of lung diseases have not as yet been classified in accord with recent views as to the nature of tubercle and its importance in the group of diseases commonly called phthisis, but the question of what climate is best for a given case must mainly depend on the nature of the process going on in the lung, whether it be truly tuberculous, or simply catarrhal, pneumonic, or pleuritic. We must then differentiate between bacillary and non-bacillary cases; both as regards climate and medicinal treatment the two groups require entirely different and often diametrically opposed plans.

As regards the non-bacillary cases, those of chronic pneumonia, chronic pleuritis, frequently recurring catarrhal implication of the lung of bronchitic character, and most cases of catarrhal asthma, will not be likely to benefit by resorting to high altitudes in winter, whereas the more moderate climates of the Riviera, and such like places, will give

results probably better, with a minimum of discomfort and less risk from association with those already tuberculous.

As regards the bacillary cases these must again be divided into two groups, the object of treatment being in : (*a*,) Curative, in the early cases, radical treatment ; (*b*,) Palliative, in the more advanced ones.

(*a*,) Pending the discovery of some reliable medicinal antiseptic treatment of bacillary phthisis, whilst climatic change is believed to be the most potent agent as yet known tending towards the arrest and healing of the bacillary lesions, every effort should be made to adopt a radical climatic change so soon as the diagnosis of bacillary disease is definitely established. Delay is superlatively dangerous ; the disease, if it is to be arrested and eradicated, must be dealt with decisively, and at once, and by the most potent means at our command. Medicinal agents may be, and should be even more than they are, employed at the same time, even at the risk of complicating the statistics of the results of climatic treatment ; but physicians at health resorts naturally extol and place confidence in their climatic measures, and have too little belief in those medicinal aids which might assist their climate and benefit the patient.

(*b*,) On the other hand the discomforts of radical climatic measures are great, and when radical treatment is not likely to be successful we should prefer some moderate climatic change, which would entail less discomfort and less risk, whilst it will be likely to lengthen the patient's life, although it may not cure the disease.

The decision of the question, What is the best climate for the patient's disease? is one thing, but there are difficulties in carrying out the ideal. It is often easy to say what would be the best thing, but as difficult for the patient to carry out the proposal. "What ought the patient to do?" is frequently at variance with another question, "What can the patient afford to do?" Climatic treatment must necessarily be a luxury for those who can afford it, but when life is at stake there are few better class patients who cannot afford a little capital which may justifiably be expended in the endeavour to regain good health.

The general tendency of modern literature is in favour of bracing cold treatment at considerable altitudes above the sea. "The question whether a cold dry or a warm dry atmosphere is the best for ordinary chronic phthisis depends to a great extent on the individual's power of maintaining circulation and temperature. When this is sufficient the cold climates are preferable ; but in the majority, and especially for women, whose circulation is weaker, the warm and dry are the best, for they are thus enabled to live more in the open air. Elevation is of great importance ; and I should always choose a mild climate with

elevation to one without it. Mountain air is not beneficial solely on account of its purity, for on this point sea and desert air may vie with it; there is another factor in the low barometric pressure and atmospheric rarefaction, and the expansion of the lungs thereby caused may be of great value in chronic first stage cases."

"As to the desirability of moist climates for consumptive patients, the evidence is decidedly against their use in the treatment of ordinary chronic phthisis. The addition of warmth only makes the damp tell more unfavourably, though a strong saline element and invigorating breezes do something to counteract the humid influences; still even these do not place a moist climate on the same level as a dry one. There is one exception, however. Phthisis, of catarrhal origin, has been shown to profit most by a warm and equable climate, even though accompanied by a certain amount of moisture, as the evidence of Madeira witnesses." (Dr. C. T. Williams, "Influence of Climate.")

Such variations as exist in the British Islands do not appear to be sufficient to justify the expectation of anything curative in their action. Doubtless the British health resorts have a great range of utility, but no one can claim for them any important influence in the radical cure of bacillary phthisis.

A paper by Bertram Thornton, of Margate, gathers and compares the meteorological statistics of a large and representative number of British health and pleasure resorts. These statistics show that the weather of one British town and another has only minute variations; that, in fact, one or two degrees of temperature will cover the difference between some of our reputed warmest and reputed coldest winter resorts. Guernsey is at the head of the list with a winter temperature of 45·5°, whereas Bath is at the bottom of the list with a temperature of 40·2°. Other tables are given, showing the daily range of temperature, the average yearly rainfall, and relative humidity. From an examination of these tables it is seen that our English climate does not, after all, differ as much as is sometimes supposed, even in the farthest separated localities.

Dr. Crespi, in his paper on Bournemouth, gives evidences that the differences in climate of different parts of England are not great. "A person, who wants a warm, bright winter, and no frost must, therefore, not take up his quarters at Bournemouth, or even at Guernsey; he must, like the swallows, go to more favoured climes, where the winter temperature is decidedly higher than anything ever found from November to April, except for three or four days at a time, in any part of the United Kingdom."

The patient in search of a suitable climate may well peruse "Wan-

derings in Search of Health," by H. Coupland Taylor, (Lewis, 1890). It is written from the point of view of a medical man, who himself is an invalid, and who has been abroad for several years in search of health, but who previously had also travelled a good deal in Europe, America, and the Colonies in health. It is written primarily from the point of view of the *poitrinaire*. The most important chapters are :—(*a*,) "The ocean as a health resort in phthisis ;" (*b*,) "A summer in the Engadine ;" (*c*,) "A winter at Davos ;" (*d*,) "Madeira ;" (*e*,) "A winter in the Canary Islands ;" (*f*,) "The Western Riviera."

The most important recent publication on climates and health resorts is that by Dr. Burney Yeo, (Cassell & Co., 1890). He discusses at length the relative advantages of sea and mountain, gives interesting details of the Engadine and its health resorts, and in a chapter on Davos Platz, gives the following summary of cases suitable to those high mountain health resorts founded on the testimony of a physician whose practical experience in one of them has extended over twenty years.

(1,) Where there is an obvious and well ascertained predisposition to consumption, and where perhaps a slight hæmorrhage has occurred without the manifestation of any definite local disease ; as a preventive measure a residence for two or three seasons in a high mountain station is to be recommended.

(2,) In catarrhal forms of consumption, in the early stage, without much constitutional disturbance, the best results may be looked for. But cases with much fever from the commencement, and of nervous and excitable temperament, must not be sent to high altitudes.

(3,) Chronic inflammatory indurations and infiltrations of limited portions of the lung, often the result of acute congestion and inflammation, are especially suitable ; not so, however, if a considerable extent of lung is the seat of tuberculous disease, or if, owing to the extent of lung involved and consequent changes in the sound lung, there is much difficulty of breathing.

(4,) Cases of chronic bronchial catarrh in young people ; that is to say, those cases of tendency to repeated attacks of "cold on the chest," often left behind in children after whooping cough, measles, and other maladies. But this does not apply to the chronic winter coughs of persons more or less advanced in life, or to cases where there is much *permanent* shortness of breath.

(5,) The results, in the shape of thickenings and adhesions, of former attacks of pleurisy, to which too often, the development of serious subsequent lung disease can be traced. The pulmonary gymnastics excited by treatment in high altitudes prove of great value in those cases.

(6,) Many cases of purely nervous asthma have been cured in these resorts.

(7,) Apart from cases of pulmonary disease, many other ailments, such as general loss of power not dependent on organic disease, cases of nervous exhaustion, over work, retarded convalescence in otherwise vigorous constitutions, certain forms of dyspepsia and hypochondriasis and other less strictly definable maladies, not seldom find restoration to health and strength from prolonged residence in the pure bracing air of these Alpine stations.

The most valuable evidence in high altitude treatment is that given by Dr. C. Theodore Williams, before the Royal Medical and Chirurgical Society. From an analysis of one hundred and forty-one cases treated in sanitaria varying from five thousand to nine thousand feet in altitude he deduced the following conclusions:—

(1,) That prolonged residence, at high altitudes, produces great improvement in the majority of consumptive patients, and complete arrest of the disease in a considerable proportion, such arrest being in a more or less degree permanent.

(2,) That in order to secure these advantages patients must be free from pyrexia and all acute symptoms, and must possess sufficient lung surface to adequately carry on the process of respiration in the rarefied atmosphere.

(3,) That the influence of the climate seems to promote a change in the lungs, either of a curative or destructive character, and to oppose quiescence.

(4,) That residence at high altitudes causes enlargement of the thorax, hypertrophy of the healthy lung tissue, and the development of pulmonary emphysema around the tubercular lesions, and that this expansion of the chest is accompanied by diminution of the pulse and respiration rate.

(5,) That it is probable that the arrest of consumptive disease is partly owing to the pressure exercised on the tubercular masses by the increasing bulk of the surrounding tissue.

(6,) That the above local changes are accompanied by general improvement shown in the cessation of all symptoms, and the gain of weight, colour, and of muscular, respiratory, and circulatory power.

(7,) That consumptives of both sexes benefit equally by mountain residence, but that the age of the patient exercises considerable influence on the result.

(8,) That the high-altitude treatment seems to be specially adapted to cases where heredity and family predisposition are present.

(9,) That the climate is useful in cases of hæmorrhagic phthisis, and that hæmoptysis is of rare occurrence at the mountain stations.

(10,) That mountain climates are most effective in arresting phthisis when the disease is of recent date, but they are also beneficial in cases of longer standing.

(11,) That the special effects of high-altitude residence on the healthy and sick are common to all the mountain ranges of elevations of five thousand feet and upwards.

(12,) That to ensure the full advantages of high-altitude residence a period of at least six months is necessary in the majority of consumptives. In cases of long-standing and extensive lesions one or two years are often requisite to produce arrest of the disease.

(13,) That, in addition to the above examples, mountain climates are beneficial in : (*a*,) Cases of imperfect thoracic and pulmonary development ; (*b*,) Chronic pneumonia without bronchiectasis ; (*c*,) Chronic pleurisy, where the lung does not expand after removal of the fluid ; (*d*,) Spasmodic asthma, without much emphysema ; and (*e*,) Anæmia.

(14,) That they are contra-indicated in the following conditions : (*a*,) Phthisis with double cavities, with or without pyrexia ; (*b*,) Cases of phthisis where the pulmonary area at low levels hardly suffices for respiratory purposes ; (*c*,) Catarrhal phthisis ; (*d*,) Erethitic phthisis, or phthisis where there is great irritability of the nervous system ; (*e*,) Emphysema ; (*f*,) Chronic bronchitis and bronchiectasis ; (*g*,) Diseases of the heart and greater vessels ; (*h*,) Affections of the brain and spinal cord, and conditions of hypersensibility of the nervous system ; and (*i*,) Where the patients are of advanced age, and where they are too feeble to take exercise.

Cullimore's Book of Climates (Baillière, 1890), and a series of papers in the "Medical Press and Circular," vol. xlviii., 1889, give a concise and clear account of the climates of the different countries of the globe, their salubrity, health resorts, mineral springs, and prevailing diseases. We quote the following passage as the most important in the treatment of phthisis. "The winter climate of Davos, then, is characterized by a still, dry, cold and rarefied air, with great solar mid-day heat, and extreme cold in the shade, particularly at night, and by the great purity and freedom from germs of the atmosphere at all times. From this description of the climate it will appear that Davos is no place for advanced consumption. Unless an invalid be able to take exercise, and enjoy the pure, cold, exhilarating air, he is, to say nothing of the chilly discomfort and monotony, pretty sure to suffer from a winter sojourn at Davos-Platz. . . . . Thus it appears that either in its winter or its summer aspect the climate of Davos is one from

which all judiciously selected *poitrinaires* may expect improvement in, many arrest of, and some the cure of, their malady. Suitable patients may expect cure in the first stage, and sometimes in the second ; and when the powers of the constitution are good, though the lung may be considerably diseased, they may hope for arrest or at least considerable improvement."

Further evidence on this point may be derived from an interesting paper, by Dr. Arthur Foxwell, "Davos and Engadine Valleys," "Birmingham Medical Review," 1888, who gives full particulars of the climate and mode of life in the higher Swiss valleys, and then discusses the question, What kind of patients do well in the Alps? It concludes as follows ; "In these Alpine villages the *majority* seem to improve if they do not get well ; and a far larger actual arrest takes place than in our own moist and low-lying climate."

The following remarks by Dr. W. R. Huggard, of Davos Platz, are the most recent views of one who is well qualified to speak with great authority on the subject : "The gist of what I have to say in regard to phthisis is this. The selection of a climate turns not so much on the extent of disease or the stage of the disease as on the general constitution of the person, and his capacity for reacting to a stimulating climate. If the disease, no matter how extensive, be not scattered ; if there be sound lung enough left in reserve to do the increased amount of work required at a high altitude ; if the heart also is able to take its share in extra duty ; and if the patient has not already been too much pulled down by fever—if these four conditions are present a high altitude in my opinion offers the best prospect of arrest of pulmonary phthisis. Touching other cases—cases of unresolved pneumonia, and cases with patches of catarrhal inflammation which show a tendency to become chronic, but in which evidence of a bacillary nature is absent, and cases of retracted chest wall from recent pleural adhesion—in all these cases also I believe that no other kind of climate offers anything like the same advantages as a high altitude.

"Not even putting aside tubercular and inflammatory conditions there is perhaps no lung trouble that receives so much benefit from high altitudes as does ordinary spasmodic asthma. On this point there is absolute agreement between physicians in the Rocky Mountains and in the high Alpine Valleys. Cases of asthma in old persons where the disease can be traced either to emphysema or to cardiac mischief would of course be greatly damaged by attempting to live at a high elevation above the level of the sea.

"Cases for which I regard a high altitude as contraindicated, are those in which the oxygenating and oxidising apparatuses are not in a con-

dition to respond to the greater call that would be made on them in rarefied air, mitral diseases, emphysema, involvement of so much lung that barely enough is left for aerating purposes in the lowland; these cases at once exclude the possibility of treatment in the mountains.

"As regards hæmorrhage. For the small congestive bleeding in early phthisis, a high altitude is especially indicated. For the late copious hæmorrhages from cavities, a high altitude is only likely to aggravate the mischief.

"When the temperature ranges over 102° F., or where there is any evidence of the case running a rapid course I think mountain climates are unsuitable—at any rate for the time being.

"In what I have said I used the expression 'stimulant' climate. Now in my forthcoming book I go to a great deal of trouble to show that strictly speaking the term is not a proper one; that its use is based on a one-sided and erroneous doctrine. I have sought to show that the bracing or relaxing effect of a climate is relative to the power of reaction in the patient."

Besides Davos, and the resorts in the Engadine proper, there are other European stations steadily rising in public estimation. Wiesen, about two hours from Davos, deserves to be better known, and is one of the best places for a change from either Davos or St. Moritz. Arosa is another hamlet in the neighbourhood of Davos which may serve a similar purpose. Andermatt, on the St. Gothard road, is being developed as a winter station, and (as is also now Davos) is exceedingly easy of access by railway.

Out of Europe many elevated resorts are becoming well known; Denver at about the altitude of Davos, Colorado springs at about that of St. Moritz, and Manitou springs two hundred feet higher, are the most frequented spots in a region which presents a favourable field for those who, being threatened with consumption, feel it necessary to find an occupation whilst seeking the arrest or cure of their disease.

Teneriffe, as a health resort, has been extolled by Dr. J. K. Barton. It was thought that bronchitis and all inflammatory diseases of the lungs, for which a mild winter is demanded, would do well there, but in the discussion which followed the reading of the paper before the Royal Academy of Medicine, in Ireland, it was pointed out by Dr. James Little that "an atmosphere of dry air, however cold, was the one that opposed the greatest obstacle to the progress of pulmonary consumption. Of all the climates, that of Colorado was the one which seemed to him to be the best for purity of air and dryness—the two great factors in combating the disease."

Fisk, of Colorado, as a result of his observations, says that "taking

cases as they come to us, we can expect improvement in two out of three ; that men do better than women, as in fact they do anywhere ; that persons over twenty years of age do better than those under twenty, and that those over thirty years of age do still better ; that heredity forms no bar to a person's coming to Colorado, but that the more indirect the inheritance the better are the chances ; nor should a hæmorrhagic tendency debar one from coming, as such cases do admirably well ; that the chances of obtaining an arrest of trouble are improved by the patient's possessing a sound digestion, a good appetite, and a pulse and temperature not much raised above the normal ; and patients in the early stages of the disease, especially if their digestion be sound, appetite good, and pulse and temperature nearly normal, are the fittest subjects for our climate, whether they have any hereditary tendency or not."

Arizona has been extolled by Dr. C. L. G. Anderson. The plateau region has an altitude of five to seven thousand feet, "where the coolness, the low degree of humidity, and the high percentage of ozone make up an atmosphere extremely inimical to bacterial life."

Dr. Sandwith points out the advantages of Cairo and the Pyramids as a health resort. He considers that cases of phthisis in its early, quiescent, and non-pyrexial forms are most likely to do well.

Dr. W. Thomson, of Algiers, writes as follows : "Speaking generally, I consider the climate of Algiers suitable in all or nearly all cases of consumption, from whatever cause proceeding, provided only that they do not come there too late, and that when they do come they do not imagine that because they are in Africa they can do just whatever they please. In my opinion, from a fairly long experience, that is the *sine qua non* in the treatment, climatic or otherwise, of Phthisis, and I think it is a feature too often ignored whilst great stress is laid upon this or that place having a certain mean temperature, rainfall, etc. I am certain that a careless style of living and non-observance of proper precautions have more to do with the rate of mortality in phthisis than any slight deviation of temperature or humidity of the air."

We may hope that in the near future the numerous and careful observers who have abundant opportunities of seeing the effect of high altitudes in phthisis may give us further statistical evidences of the curative value of climate in bacillary disease ; meanwhile the necessity for a separation of the bacillary from the non-bacillary cases becomes increasingly evident, inasmuch as the danger to the non-bacillary cases from association with infected persons, in infected regions and infected houses must necessarily be great.

REFERENCES.—"Lancet," May 12, 1888; Ibid., Sept. 20, 1890; "Bir-

mingham Med. Rev.," 1888; "Lancet," April 20, 1889; "Boston Med. and Surg. Jour.," Aug. 15; "New York Med. Record," July 5, 1890; "Practitioner," Sept., 1890.

PHTHISIS (Laryngeal).

Synopsis.—(Vol. 1890, p. 423.) **Menthol**, 10 or 30% oleaginous solution, best in liquid **Vaseline** applied with a cotton-wool brush; **Lactic Acid**, 25% of pure acid gradually increased to 100% and applied daily; it is also used subcutaneously, 5 to 10 drops of a 20 to 30% solution being injected into the submucous tissues of the larynx. **Biniodide of Mercury**, 1 in 500, aqueous solution with **Potassic Iodide**, is a useful application; **Camphorated Naphthol** locally applied; **Creolin**, ½ to 2% watery solution, brushed on, or as a gargle (1 to 5%) in diphtheria, tuberculosis, etc.; application of the **Galvano-Cautery**.

PILES. (See "Hæmorrhoids.")

Synopsis.—(Vol. 1890, p. 427.) ℞ Bismuth Subnit. ʒij, Hydrarg. Subchlor. ʒj, Vaseline ʒj, M.; Ft. Ung. ℞ Liq. Plumb. Subacet. ʒj, Liq. Opii Sedativus ʒss, M.; a teaspoonful of the lotion to be mixed with two teaspoonfuls of milk. For internal piles aperients are required as follows, ℞ Pil. Hydrarg. gr. ss, Ext. Coloc. Co. gr. ss, Pulv. Rhei gr. ss, Ol. Juniperi ♏j, M.; or ℞ Mag. Sulph. grs. xx, Liq. Ammon. Acet. ʒss, Pot. Nitrat. grs. xv, Liq. Ext. Cascara ♏x; to be taken two or three times a day. **Hazeline** as a rectal injection; injection of **Carbolic Acid**, 1 in 10.

PITYRIASIS RUBRA.

Synopsis.—(Vol. 1889, p. 392.) **Arsenic** in large and long continued doses; diuretics, enveloping body in bandages soaked in **Calamine Liniment**, using an aperient if necessary, and giving ℞ Pot. Bicarb., grs. xx, Ac. Citrici, grs. xij, Quin. Sulph., grs. iij to v, taken effervescing and repeated every four hours. For *Pityriasis Rosea:* **Ung. Ac. Borac.** or **Calamine Lotion** with **Liq. Carb. Detergens**, ♏x to ʒj to allay itching.

PLEURISY. *F. de Havilland Hall, M.D.*

Dr. Halliburton has been making a series of observations on the fluids met with in cases of pleural effusion, and he has arrived at the following conclusions: (1,) That in cases of acute inflammation the fluid is of higher specific gravity, and is far richer in proteids, than in those cases where inflammation is absent; (2,) That the yield of fibrin is also greater, when inflammation is present; (3,) That with regard to the proteid quotient (that is, the proportion, albumin: globulin), it is very variable, and its variations show no fixed relation to the cause of the disease. It may also be added, that the fluids removed from cases of acute pleurisy contained abundance of leucocytes, which were nearly altogether absent in the fluids removed from cases of hydrothorax; and that the fluids from the pleuritic cases invariably clotted soon after their withdrawal from the body. The fluid from the cases of hydrothorax also coagulated spontaneously, as a rule, more slowly than the fluid from cases of pleurisy and more quickly than

ascitic fluid. Pleural fluid is alkaline, of a yellowish tinge (due to serum-lutein), and sometimes clear, sometimes opalescent.

Dr. Barrs is of opinion that there is a close association between pleuritic effusions and tuberculous changes in the body. Of seventy-four cases of pleurisy with effusion under treatment in hospital between the years 1880-84, thirty-two are dead, twenty-five are living, and seventeen could not be traced; that is, there had been a death-rate in the cases which could be traced of something like 57 per cent. In the thirty-two fatal cases the average age of the patients was 32·5 years, the maximum being 54 and the minimum 3. As to the duration of life after the onset of the disease, there died in hospital three, died the day after leaving hospital one. In the remaining twenty-eight cases the average duration of life was two-and-a-half years, the maximum being five years and the minimum six months. The causes of death in the thirty-two cases were as follows :—

Known Phthisis	14
Probable Phthisis	1
Hip Disease	1
Tubercular Meningitis	1
Acute Tuberculosis	1
"Pleurisy"	3
"Dropsy"	2
"Hydropericardium"	1
Unascertained Causes	8
Total	32

So that twenty-one cases out of thirty-two died of the disease "pleurisy," or some recognized tuberculous condition, mainly phthisis pulmonalis.

Dr. Barrs considers that empyema and simple pleuritic effusion have very little in common either in their clinical march, their pathology, or their ultimate event.

Of the forty cases of empyema coming under treatment in the same period of time as the pleurisy cases, thirty-two cases are well, six are dead, and of two there is no return. Of the six fatal cases, one died of chronic Bright's disease (not lardaceous), one died of croup when four years old, two died in hospital of "exhaustion from prolonged discharge," and in two cases the cause of death could not be ascertained.

Dr. Barrs quotes with approval the following conclusions of Mayor:

(1,) "The majority of cases of simple idiopathic pleurisy, or of pleurisy from exposure to cold, conceal or reveal a tuberculous process; (2,) A careful study of the lung in the neighbourhood of the effusion

is more important in regard to the prognosis in any given case than the study of the effusion itself; (3,) The immediate prognosis in cases of pleuritic effusion is, under present conditions of treatment, almost always favourable: the remoter prognosis, on the contrary, should always be most guarded."

Otto, of Dorpat, describes a method of treating the pain met with in pleurisy which he has used for some years. This is partial **Compression of the Thorax.** He does not claim that it is applicable to every case of pleuritic pain; but says that it is necessary that there should be no great degree of deformity of the thorax, and further that its elasticity should be within the physiological limits. The compression is carried out by a bandage three inches broad, which is applied around the chest at a height corresponding to the seat of pain, and with sufficient firmness to place a restriction upon the inspiratory movements of the compressed ribs. He has tried elastic bandages, but has discarded them for cotton material. The process of bandaging is commenced in the axillary line of the sound side and carried tightly round the thorax in an over-lapping double row. The end of the bandage is firmly fixed to the first part with a safety pin, the patient being allowed to expire moderately before doing so. When the bandage is so applied, the patient at first always feels the pressure very constricting, but after a few minutes he becomes quieter and the breathing more regular; the catching pain ceases; and he finds that he is able to take a deeper inspiration with comfort. Otto remembers only one case in which the patient insisted on having the roller removed; but after this was done, he felt so much more pain that he begged to have it re-applied.

In regard to the question of **Tapping** in cases of pleurisy with effusion Dr. Vincent Harris' plan of proceeding is as follows: "If the preliminary aspiration with the small syringe has demonstrated the presence of pus, I do not delay the operation, if I can possibly help it, a single day; or again, if the physical signs reveal the presence of a large effusion of whatever nature, I recommend immediate operation. I think a patient with one side of his chest full of fluid is in considerable danger of death, and especially of death from syncope. With such a belief it behoves one to be careful not to delay the immediate and certain relief afforded by paracentesis thoracis.

"If the fluid be not pus, and be moderate in amount, immediate operation is not necessary, and it is permissible to wait awhile and watch the case; in fact, to adopt the expectant treatment. As regards the use of drugs and other methods supposed to aid the absorption of the fluid, I confess I have but little faith in them."

He, however, makes an exception in favour of **Blisters** and of

the preparations of **Iodine** externally, and of **Iodide of Potassium** internally. He advises the use of good and even generous diet; one distinguished physician is reported to have given the alliterative advice of beef and beer as the best means of promoting absorption. Dr. Harris would also allow the patient to get up part of the day, and if the weather be fine and warm, moderate exercise in the open air should be allowed.

More than a fortnight should not be permitted to elapse before tapping in a case in which the area of dulness, due to fluid, remains stationary; perhaps one should curtail even this period of expectation. If the fluid is manifestly increasing, do not delay to tap. In fact, the days are gone by in which paracentesis thoracis was a method of treatment adopted as a last resource, and we may now lay down a rule that, in cases of doubt, proceed to that method without delay.

In cases of non-purulent effusion there are two chief "close" methods of removing the fluid, or rather some of it, viz., by means of an aspirator of some kind, or by the syphon plan. If the aspirator be judiciously used, that is to say, with as small minus pressure as is compatible with success, and if no attempt be made to remove the whole of the fluid, aspiration is practically safe. The second method, by syphoning off the fluid consists in attaching to the trocar and cannula used for the puncture an india-rubber tube sufficiently long to reach from the patient's bed to the floor: it is filled with some antiseptic solution, for example, carbolic acid, perchloride of mercury, or boric acid, and the free end of it is nipped by the fingers of an assistant below the level of some more antiseptic fluid in a vessel on the floor or raised well above the patient's bed. When the trocar is withdrawn, in an air-tight collar, the end of the tube in the fluid is unstopped, and if the vessel has been raised it must be lowered and placed on the floor. In this way, as the attached tube is now in free communication with the cannula tube and with the fluid within the chest, a syphon action is set up and the fluid flows quietly and at a moderate rate into the vessel containing the antiseptic. If the cannula becomes stopped the tube may be flushed out by a return current of fluid set up by raising the vessel in which the antiseptic is well above the patient's bed.

At the recent German Congress of Internal Medicine held at Vienna, a prolonged debate took place upon the treatment of empyema. A certain number of the speakers were adverse to treatment by free incision but preferred drainage by Bülau's plan. But all were unanimous upon the necessity of prompt interference; and of those who supported rib-resection and free incision there were few who con-

sidered it needful or wise to practise injections. This expression of opinion as to the undesirability of washing out the pleura is all the more important in view of the fatalities that have occurred during carrying out of this apparently simple procedure. The *method of Bülau*, of Hamburg, to which reference has just been made, is as follows: A broad trocar (with cannula) is inserted through one of the lower intercostal spaces into the empyema; the trocar is removed; and a soft india-rubber tube is passed into the pleural cavity, over which the cannula is withdrawn. A drainage tube thus remains in, and is connected by a glass tube with a long tube which hangs into a vessel with sublimate lotion, and is retained there by a leaden weight. By this means gradual and continuous aspiration goes on, chloroform is not necessary, the patient is not disturbed by the operation, pneumothorax does not occur, and deformity does not remain behind. The results are very good; and the method can be used where the condition of the patient is low, as well as in tuberculous cases. For pyopneumothorax, however, it is of little value.

Dr. Schede said that excellent results could be obtained by Bülau's method; in bilateral empyemata it was almost indispensable. It had two great disadvantages, however, namely, that the drainage tube easily became blocked, and that under certain conditions, as in children, the mechanism could only with difficulty be kept in working order. The most reliable method was free incision with simultaneous resection of ribs. For the site of incision he chose the lowest part of the pleura outside the posterior axillary line, so that in certain cases the tenth, ninth, and eighth ribs had to be resected. Dr. Schede denied that the expansion of the lungs was necessarily hindered and deformity of the chest produced by the open incision, and cited cases in proof of his contention. He also argued that amyloid degeneration and tuberculosis did not contraindicate the procedure. He had had a case in which severe amyloid degeneration of the liver with ascites and anasarca completely disappeared after extensive resection of the chest wall; and of four cases of empyema in tuberculous individuals under his care, three had recovered after operation.

Mr. Morgan has had a case of double empyema in which he performed the operation of resection of rib on both sides. The patient was a boy aged six, and the operations were performed at an interval of twelve days. Mr. Morgan well points out that an empyema is a collection of fluid limited in area and bounded by firm margins, and in which the contained fluid exercises an extreme amount of constant pressure upon the surface of lung with which it is in contact. The conditions, therefore, when an exit is given to the contents must be in

the direction of relieving pressure upon the lung, and there is no analogy between opening such a cavity and permitting air to enter a healthy pleura, since the pressure of air which is admitted to the cavity of an empyema is limited by the margins of the abscess cavity and has less weight and power of pressure than the fluid which it replaces.

Dr. Harris' remarks on the post-operative treatment in cases of empyema are so valuable that they deserve to be quoted *verba im.* He emphasises two details: (1,) "The necessity of getting the patient out of bed as soon as possible, and, further, of getting him into the open air without delay. By attention to these points one is likely to cut short the long period of convalescence, and, in cases where there is an open wound to diminish the discharge; (2,) As soon as it is possible, that is to say, early in cases of the "close" operation, and as soon as the discharge, is small (say ʒss. per diem), when there has been incision, make the patient expand his chest by regular and frequent but moderate dumb-bell exercise or by drilling."

The best results I have obtained have occurred in cases in which I have insisted upon this regular muscular exercise. The extraordinary muscles of inspiration are thus brought into play, the lung expands more completely, and the chest cavity, which always has a tendency to diminish in pleural effusions after operations, has a chance of returning to its normal capacity.

REFERENCES.—"Brit. Med. Jour.," vol. ii., p. 195, 1890; Ibid., vol. i., p. 1058; Mayor, "De l'Avenir des Pleuritiques," Paris, 1887; "Berlin Klin. Woch.," No. 39, 1889; "Brit. Med. Jour.," vol. i., p. 1061 1890; Ibid., p. 977; "Lancet," vol. i., p. 983, 1890; "Wien. Med. Woch.," No. 17, 1890; "Berlin. Klin. Woch.," No. 17, 1890; "Lancet," vol. ii., p. 124, 1890.

Synopsis.—(Vol. 1889, p. 393.) Injection of **Cocaine**, gr. $\frac{1}{6}$ or $\frac{1}{4}$ at seat of pain, repeating it once or twice daily, relieves pain and lessens tendency to effusion.

(Vol. 1890, p. 429.) **Saline Cathartics** instead of paracentesis, using **Magnesium Sulphate**, ʒij, dissolved in as small a quantity of **Hot Water** as possible, and given twice daily.

PNEUMATURIA.

Robert Saundby, M.D., F.R.C.P.

This name is given to a condition in which gas collects in the bladder and is voided per urethram. As a rule this is due to a communication between the bowel and the bladder, and sulphuretted hydrogen is present. In a case reported by F. Müller, of Bonn, where he states that it was possible to exclude the possibility of any communication with the bowel, the bladder contained gas which could be collected, and consisted chiefly of CO_2, H and N; H_2S was not present. The

urine contained sugar, and Müller thinks the gas was due to the fermentation of the sugar, but he does not seem to have shown that the urine contained alcohol.

PNEUMONIA. *F. de Havilland Hall, M.D.*

The precise part paid by *cold* in the production of pneumonia has been elucidated by the experiments of Dr. G. Lipari, of Palermo. He has shown that the endo-tracheal injection of pneumonic sputa or pleuritic exudation of animals which had died from pneumo-cocci gives a negative result, but if the animal, either before or after the injection is exposed to cold, the result is very different. Of eight animals so treated six died with pneumonic infiltration. Dr. Lipari supposes that the cold paralyses the ciliated epithelium of the bronchi, and at the same time causes their mucous membrane to swell, both of which pathological processes favour the descent of the infectious material into the alveoli.

In a discussion on pneumonia, introduced by Dr. Churton, at the Medical Society of London, Dr. Theodore Williams agreed with the author of the paper that the tendency to death in pneumonia was by cardiac failure, but with reference to **Stimulants** it was necessary to issue a warning against exhausting the heart by over-stimulation. Dr. Finlay was also of opinion that the tendency was rather to over- than under-stimulate cases of pneumonia. **Strychnine** or **Nux Vomica** was recommended as a valuable aid in cases of cardiac failure. The sulphate of strychnine may be used hypodermically in doses of $\frac{1}{60}$ to $\frac{1}{20}$ grain.

Dr. Lees has for the last four years tested the use of the **Ice-Bag** in pneumonia as opportunities occurred. The use of cold compresses to the chest in pneumonia was advocated twenty years ago by Niemeyer. Dr. Lees claimed that the ice-bag produced a much more powerful local impression. Niemeyer confessed that some patients found the compresses so disagreeable that he had been obliged to give them up, but Dr. Lees had found that the patients usually liked the ice-bag. He has employed this method of treatment in eighteen cases without a death, though two at least would certainly have died without the ice-bag, and two others would almost certainly have done so. In the great majority remarkable improvement followed the use of the ice-bag. The reduction of temperature, which usually occurred at once, was often very striking. Instead of the "entire degree" claimed by Niemeyer as the result of the use of cold compresses, it frequently amounted to 3° or 4°, or even more. If a subsequent rise occurred, it was usually to a decidedly lower level when the ice had been permanently applied, and though when the ice had been removed,

the subsequent rise often passed the original height, it was rapidly again reduced by a second application. These results were specially observed in children, perhaps partly because their temperature was more easily affected than that of adults, and partly because the ice-bag covered a larger proportion of their smaller chest-wall. But the improvement was not confined to a mere reduction of temperature. In many cases there was a striking arrest in the development of the physical signs and also of the general symptoms, and it was particularly to be observed that in some instances this improvement began an entire day or more before the crisis, and was far advanced when that event occurred. Occasionally, in slight cases, the application of the ice had been followed by the immediate complete termination of the disease, but no stress was laid upon this because of the possible fallacy of synchronism with the crisis. But in the two cases of broncho-pneumonia seen in young children in their very earliest stage, it certainly seemed that the disease was promptly cut short. Dr. Lees had never seen any harm done by the ice-bag in pneumonia, though in one case of typhoid he had seen shivering and some lividity produced by it; this, however, was easily remedied by warmth and brandy. Similar symptoms might no doubt be produced by the incautious use of ice in pneumonia; they were the more likely to happen the younger the patient, and especially in feeble and rickety children. They might almost always be prevented by a sufficiently careful observation of the temperature. It was a good rule to ascertain this hourly, and to remove the ice when it fell to 100°, replacing the ice if a rise to 102° followed. In some cases it was wise to apply warmth to the feet, or even to the abdomen, at the same time that the ice-bag was applied over the inflamed lung. It was well, also, to keep the ice away from the præcordial region, to prevent any depressing action on the heart, similar to that demonstrated by Dr. Brunton on the excised heart of the frog. Dr. Lees did not advocate the use of the ice-bag in pneumonia occurring in very feeble children, or in aged persons, or in adynamic conditions generally. But, with these exceptions, he thought there was reason to conclude that its employment had a distinctly curative influence, that it did not simply reduce temperature, but directly tended to repress the inflammatory process in the lung, with more or less success, according to the severity of the case.

In discussing Dr. Lees's paper, Dr. Goodhart said he had for eighteen months used no other application than the ice-bag in cases of acute pneumonia, and he gave an account of eighteen cases thus treated. A good result was obtained in eight cases, the temperature falling promptly, the pulse becoming decreased in frequency, and con-

valescence being rapidly established. In seven cases it was doubtful if the treatment had had any effect whatever; while in three cases symptoms of collapse were produced of a very temporary nature, for it subsided as soon as the ice-bags were removed. It was difficult to eliminate the question of the natural crisis of a pneumonia having coincided merely with the application of the ice, but it was also possible to underrate the value of any treatment because of the presence of pleurisy, which interfered with the beneficial results of the remedy. Dr. Goodhart, however, concluded that there was no danger in applying this treatment, such collapse as might occur being easily detected, and remedied by brandy and warmth to the feet, and by avoiding its use in patients under two years of age. He himself did not think that collapse was increased by the application of cold over the cardiac region. Moreover, he believed that warm applications were greatly overdone, and that the ice treatment was a useful alternative.

Though Dr. Lees' hopeful opinion of the ice-bag treatment has not been fully endorsed by other observers, it seems generally agreed that there is an absence of risk if the cases are carefully watched and any tendency to collapse be controlled by brandy and warmth to the extremities. The advantages claimed for this plan of treatment are relief of pain, lowering of temperature, reduction in the frequency of the pulse and breathing, and the promotion of sleep. As to the drawbacks they are not conspicuous or very serious. In none of the cases was any extension of the inflammatory process attributed to the ice-bag. In some few cases the rapid fall of temperature was accompanied by failure of the pulse, lividity and coldness which, however, readily yielded to the treatment indicated above. The possibility of the occurrence of these symptoms should be borne in mind in the event of the ice-bag being employed in private practice, unless the patient was being watched by a trained nurse.

The treatment of pneumonia by **Cold Baths** is by no means a novel idea, since we can find records of this mode of treatment in the seventeenth and eighteenth centuries. Nevertheless, this treatment of pneumonia has not been adopted with any degree of uniformity, although the works of Wunderlich and the application of Brand's method show that the abstraction of heat from the body by cold water may be of great service in a large number of diseases. In France and in this country cold baths have been almost restricted to the treatment of infectious fevers.

Two years ago Dr. Barth had under his care a young woman, thirty-three years of age, attacked with pneumonia of the right apex, with symptoms of cardiac asthenia, and in whom the temperature rose

in forty-eight hours to 106·5° F. In the face of this hyperpyrexia, he had recourse to cold baths, and he states that the effect was marvellous. Encouraged by this result, he writes that he has not hesitated to employ this method of treatment in all cases of pneumonia or hyperpyrexia; but naturally this mode of treatment is not indicated in cachectic individuals, in benign cases, or where organic lesions are present which would counter-indicate their employment.

It is thus necessary to determine before giving cold baths whether the organs of the body are in a condition to support their action. Further, the temperature of the bath must be adapted to the age and the state of the patient, and Dr. Barth maintains that it is advisable to commence with lukewarm baths, and then gradually decrease the temperature of the water until it reaches 64°, while stimulating injections of caffeine and the administration of spirits should be resorted to.

Dr. John Chambers speaks very highly of the effect of the inhalation of **Oxygen** in pneumonia. The time for using oxygen with benefit has been found to be that very critical stage when lividity and cyanosis testify to the difficulty with which the circulation is being carried on. Since the direct result of an impeded circulation is a deficient aeration of the blood, it is not surprising that oxygen inhalation affords a certain promise of relief. Under its use the lips recover their redness, the breathing becomes easier, and the enfeebled heart's action is re-enforced. Dr. Chambers is satisfied that he has saved life in cases in which, from all the indications present, a fatal result was inevitable. He recommends that a rubber bag having a capacity of one or two gallons and provided with a stop-cock at one end be used. To this a short rubber tube ending in a mouth-piece can be readily attached. The mouth-piece is applied over the mouth of the patient, the valve of the bag is turned and the whole or any portion of the gas in the bag can be inhaled at a single dose. As the gas is heavier than air, its escape from the bag will be facilitated by holding this above the level of the mouth, and slight pressure upon the bag will still further assist in the inhalation. From half a gallon to a gallon of gas can be given every half-hour with perfect safety and with great relief to the patient's symptoms. Dr. Chambers has continued such doses for four days and nights with the most satisfactory results. Life has certainly been saved in many cases when it has seemed that death was inevitable. Brin's Oxygen Company, Victoria Street, Westminster, supply pure oxygen gas in cylinders holding twelve cubic feet at the price of three shillings.

Professor Crocq, of Brussels, having prescribed **Acetate of Lead** in

a large number of cases, is convinced that it frequently reduces the heart beats as much as ten or fifteen per minute in a single day, and that it exerts an equally marked effect upon the temperature, the sputum, too, becoming less in quantity and less deeply tinged. Instead of producing constipation, it is far more likely to open the bowels; but, notwithstanding this action, there is no objection to prescribing it with a little **Opium** in cases where diarrhœa is present, or, if preferred, **Trisnitrate of Bismuth** may be added instead of opium. Small doses are of very little use, the minimum quantity that should be ordered for an adult per diem being 6 grains, and this may sometimes be increased with advantage to as much as 15 grains.

This treatment may be continued for a fortnight without any symptoms of lead poisoning presenting themselves. Prof. Crocq remarks that it may be given at all stages of the disease, but at the beginning in strong subjects, and when the pain is severe, its action is but slight, and antimonials are to be preferred at that time.

Where, however, resolution is delayed; where there is but little fever; where the patient is very weak; where there is enteritis or diarrhœa; and especially where the digestive organs will not tolerate antimony, **Acetate of Lead** is very valuable. Again, when the pneumonia is secondary to some other serious disease, and when the heart is acting insufficiently so that the pulmonary circulation is interfered with, as in Bright's disease, in organic affections of the heart, in drunkards and in old people, acetate of lead will sometimes work wonders; indeed, he considers that it is most valuable in serious cases. Of course it must sometimes be combined with **Alcohol.**

Dr. H. C. Wood argues powerfully for the use of **Veratrum Viride** in the first stage, and **Digitalis** in the latter stages of pneumonia. He says:

"Now take a case of ordinary pneumonia. We are called to it in the very flush of the disease. We find that the chill has passed by, that the patient has a high fever, that there is a high, bounding pulse, full and strong. We notice, also, that the lower lobe over the left lung is full of blood. What has brought the flux of blood to that point? There has been everywhere in the lower lobe of that lung a dilatation of capillaries, a vacuum, the effect of a relaxation of pressure. The heart being excited and the arterial pressure being continued, these relaxed, dilated vessels, draw the blood into them, the whole lobe becomes full of blood, while the arterial or capillary system everywhere is contracted save only in this lobe over the lung. Under such circumstances **Veratrum** is to be used. In the first place, it depresses and quiets the heart, it reduces the arterial pressure and drives the blood into that territory where resistance to blood entrance is slight.

But it does more than this. It builds up the capillaries all through the system. You will remember that the relaxed vessels of the abdomen are of such size that they are capable of holding all the blood in the body. You can put all the blood of a man, after death, in his abdominal vessels, and they will not be over full. Now when, under the influence of a dose of veratrum, the heart has been lowered in power and the whole abdominal cavity has been opened wide, there is then a great suction of blood away from this lung. The blood that fills and chokes up this territory goes off to the abdomen, and you thus get an effect which, in days gone by, our ancestors got by the use of the lancet." In the later stages, when consolidation has taken place, the author recommends the use of **Digitalis** "until you have evidence of its presence."

REFERENCES.—"Lancet," vol. i., p. 418, 1890; Ibid., p. 135; "Brit. Med. Jour.," vol. ii., p. 925, 1889; "Lancet," vol. ii., p. 908, 1889; "La Médecine Moderne," July 3, 1890, "Therap. Gaz.," Aug. 15, 1890; "Lancet," vol. i., p. 1120, 1890; "Lancet," vol. ii., p. 1192, 1889; See also "Medical Annual," p. 395, 1889; "Philadel. Med. News," Jan. 18, p. 57, 1890.

Synopsis.—(Vol. 1889, p. 394.) **Saline Purgatives, Diuretics, and Diaphoretics; Digitalis** leaves ʒj to ij in infusion during twenty four hours; **Tartar Emetic**, gr. $\frac{1}{15}$ hourly to young adults, less often to older patients; **Ice Bags** for treatment of broncho-pneumonia in children, or **Leiter's Tubes. Acetanilide**, gr. xl per diem in sthenic cases (p. 9).

(Vol. 1890, p. 432.) **Calomel**, gr. xx, every three hours for twenty-four hours, in croupous pneumonia; **Quinine**, grs. iij, dissolved in a little dilute **Hydrobromic Acid** every three hours, and if there is much headache, combined with **Tincture of Digitalis**, ♏iij or iv, in pneumonia, broncho-pneumonia, and whooping cough. If skin is hot and dry, and urine loaded with urates, give a little effervescing **Citrate of Potash** with some sweet **Spirits of Nitre**, alternately with the **Quinine**; **Brandy** in tablespoonful doses every four hours from the start. In the case of pleurisy, **Morphine** must be combined, and a little **Grey Powder** is useful. **Quinine** controls the spasm of pertussis, and if there is much secretion, or want of nerve power, it should be combined with **Syrup of Lactophosphate of Lime. Sodio-salicylate of Caffeine**, grs. iij daily, in acute fibrinous pneumonia, if heart is weak and collapse threatens.

PNEUMOTHORAX.

Synopsis.—(Vol. 1889, p. 396.) **Stimulants, with Opium or Morphia**, for the shock, or diffusible stimulants, *e.g.*, Sp. Ætheris, with inhalations of **Iodide of Ethyl or Nitrite of Amyl**; aspiration if dyspnœa and cyanosis supervene; removal of fluid, replacing it by sterilized air where pleural effusion has set in.

POLYARTHRITIS.

Synopsis.—(Vol. 1889, p. 50.) **Kava Kava.** ℞ Ext. Kavæ depur. gr. xlv; Sacch. Alb., grs. ccc, M. Ft. Pulv. Div. in dos. x; Sig. Pulv., j 3tis hor., relieves the pain but does not cure the disease.

POLYPUS. (See "Nasal Polypus.")

POST-NASAL GROWTHS (See "Naso-Pharynx.")

POST-PARTUM HÆMORRHAGE. (See "Labour.")

POTT'S DISEASE. (See "Orthopædics.")

PREGNANCY (Disorders of). *Arthur H. N. Lewers, M.D.*

Hæmorrhage during Pregnancy.—When hæmorrhage occurs at periodical intervals during pregnancy, and especially if it has not been preceded by any interval of amenorrhœa, the existence of pregnancy is very frequently overlooked. A woman may have periodical losses of blood, which she takes to be due to ordinary menstruation, during the first four or five months of pregnancy. She may thus be herself ignorant of her condition, and, unless a careful examination is made, her medical attendant may easily be misled also. The possibility of pregnancy should therefore be borne in mind, even though the patient believes herself to be menstruating regularly. Systematic physical examination as a routine method in every case where an examination is made at all is the best safeguard against an oversight. The abdomen should always be examined by the methods of inspection, palpation, percussion, and, if any swelling is felt, by auscultation. Attention should be directed to the condition of the breasts. Locally, the colour of the vaginal walls and the state of the cervix should be carefully ascertained. Above all, the *size and consistence of the body of the uterus*, as observed by the bimanual examination, will afford the most valuable grounds for diagnosis.

The causes of hæmorrhage in women are so numerous that it is well to divide them for practical purposes into two classes: (1,) Those associated with pregnancy; and (2,) those having no direct relation to pregnancy. It is with the former class that we are alone concerned here

The more important causes of bleeding during pregnancy are as follows: (*a*,) *Abortion or Miscarriage*, either of which may be *threatened; i.e.*, when the bleeding is only slight, the os is not patulous to any marked degree, and there are no uterine pains or only feeble ones. The treatment in such cases should consist of complete rest in bed, and the administration of sedatives; for example small doses of **Opium** with full doses of **Bromide of Potassium.** Many observers speak highly of **Viburnum Prunifolium** (ʒss. of the liquid extract ter. die or oftener). Under favourable conditions the bleeding may then cease, and the pregnancy continue. The patient should remain in bed for at least a week after the bleeding has stopped, and should afterwards be more than usually cautious in avoiding everything (exertion, excitement, etc.) that might cause it to recur.

Inevitable Abortion or Miscarriage.—When the hæmorrhage is considerable, and there are strong pains leading to dilatation of the os, the miscarriage is to be regarded as *inevitable.* It may only be necessary to maintain a watchful attitude, if the pains are strong and the process of expulsion of the ovum is evidently taking place rapidly. After the third month some assistance is usually needed to remove the placenta, and it is impossible to overestimate the importance of strict antiseptic precautions throughout in the management of these cases. For example, in a case where the placenta is retained, a vaginal douche of some efficient antiseptic (**Iodine Water,** ʒij Tr. Iodi. to Oj water) should be given as soon as the case is seen. The hands and nails should be thoroughly cleansed and dipped in an antiseptic solution. If the patient is at all nervous an anæsthetic should be given. One or two fingers are then passed into the uterus and the placenta carefully peeled off. The other hand assists by making pressure in the hypogastric region, on the uterus, so as to bring it more within reach of the internal finger. After everything has come away the uterus should be washed out through a double-channelled tube with **Iodine Water.** Antiseptic vaginal douches should be given, at first three times a day, afterwards twice, for a week subsequently.

In some cases when the hæmorrhage has lasted a long while and is obviously telling on the patient, or when the hæmorrhage, though it has only come on recently, is alarming, we may find an absence of pains and little dilatation of the os. In such cases the best treatment is to dilate the cervix with Hegar's dilators and remove the ovum, the patient being under the influence of an anæsthetic, preferably ether.

Missed Abortion (*i.e.*, when the ovum dies, but, contrary to the usual course of events, is retained *in utero* for a considerable time) may give rise to a more or less hæmorrhagic discharge. The diagnosis is to be made by watching the case, and ascertaining by examination at intervals that the uterus is not increasing in size. When this conclusion has been definitely established, dilatation of the cervix and clearing out the uterus is the right treatment. The proper course, it need hardly be said, in all these cases where there is a question of interference, is to have the opinion of some one of special experience in gynæcology before undertaking the treatment in question.

(*b*,) *Molar Pregnancy.*—The occurrence of molar pregnancy is another cause of hæmorrhage during pregnancy, of special interest as regards diagnosis.

(*c*,) *Accidental and Unavoidable Hæmorrhages.*—Hæmorrhage due to the detachment of a normally situated placenta—"accidental" hæmorrhage, and that due to placenta prævia — unavoidable

hæmorrhage—usually occur in the last three months of pregnancy, when the existence of pregnancy is unlikely to be overlooked. Sometimes, however, these hæmorrhages occur in the middle three months, *i. e.* the fourth, fifth, and sixth. Severe hæmorrhage, or hæmorrhage that is small in quantity, but long-continued, and obviously telling on the patient's strength, is the indication for interference during these months.

The treatment of Accidental Hæmorrhage in the later months.—When accidental hæmorrhage occurs in advanced pregnancy the treatment to be adopted depends on the amount of the hæmorrhage. If this is slight, it is only necessary to maintain a watchful attitude, ready to interfere if occasion arise. If there is severe hæmorrhage the proper treatment is to rupture the membranes, which is the most rapid method for causing the uterus to contract. Frequently repeated **Hot Vaginal Douches** after the membranes have been ruptured are also very useful for stimulating the uterus to contract, and friction over the abdomen with the hand is useful for the same purpose. In many such cases a large amount of blood has been lost before medical assistance arrives and the patient is greatly exhausted. The treatment above mentioned should be at once adopted. Brand's Essence and Liebig's extract should be given in small quantities frequently throughout. Everything likely to increase the existing shock, such as operative interference or the administration of an anæsthetic, should if possible be avoided.

The treatment of Placenta Prævia in advanced Pregnancy.—Here again the guide for treatment is the amount of the hæmorrhage. It is well in all cases to separate the placenta for a distance of about two inches in each direction, and to rupture the membranes. Hot vaginal douches should be given to stimulate uterine contraction. In many cases these measures control the hæmorrhage within safe limits. If however, they do not do so, turning, preferably by the bi-polar method, should be performed.

Owing to the tendency to uterine inertia in cases of placenta prævia, there is not the objection to the administration of **Ergot** before delivery that obtains in ordinary cases. A drachm of the liquid extract of ergot may usually be given with advantage at the time when the placenta has been detached from the area of unavoidable separation, and the membranes ruptured. If the os is not sufficiently dilated to admit the finger it can be easily dilated in a few minutes by means of Hegar's dilators to the necessary extent. The importance of strict antiseptic precautions throughout can hardly be over-estimated.

Malignant Disease of the Cervix complicating Pregnancy should be

borne in mind as a possible cause of hæmorrhage during pregnancy, and not a very rare one.

Vomiting of Pregnancy.—Gottschalk records two cases in which the vomiting of Pregnancy was succesfully treated by **Menthol.** In one of the cases abortion had been induced in a previous pregnancy on account of uncontrollable vomiting. Before proceeding to the same treatment on this occasion a mixture containing menthol was administered. The formula was :—

℞ Menthol gr. 15 | Aq. ad ℥vj
Sp. Vini Rect. ℥vj |
Sig. ℥ss every hour.

The vomiting ceased after the third dose.

REFERENCES.—"Brit. Med. Jour.," May 10, 1890 ; " Therapeutic Gazette," 1890 ; " Practitioner," Dec. 1889.

PROGRESSIVE MUSCULAR ATROPHY.

Synopsis.—(Vol. 1890, p. 435.) **Iodide of Potash, Arsenic, Rubbing,** and **Galvanism** cured a case due to syphilis and rheumatism.

PROLAPSE OF RECTUM (For). (See "Rectum.")

PROSTATE (Surgery of). *E. Hurry Fenwick, F.R.C.S.*

A series of cases of prostatectomy, or removal of the obstructing portions of the gland through a supra-pubic cystotomy wound, have been recorded in this year's literature. It is, according to Mr. Buckston Browne, a dangerous operation, only necessary in men already in broken health, and uncertain, even in cases of recovery, of being followed by release from the need of using the catheter. Contrary opinions are expressed by Mr. McGill, of Leeds, and others. The section of the obstructing portion by means of a galvano-cautery instrument was ably advocated at the Berlin Congress by Professor Bottini (Pavia), who records five deaths in sixty cases. The instrument was shaped like a lithotrite, the male jaw being the platinum blade. A practical hint is given by Mr. Buckston Browne as regards the retention of catheters in restive patients. Tying in a soft catheter is facilitated by means of a lead stilette. "It is sufficiently solid to prevent the catheter bending upon itself and slipping out, while it is soft enough to yield to the patient's postures without the risk of penetration of the urethral walls or bladder.

REFERENCES.—Bottini, "Brit. Med. Jour.," p. 408, pt. ii. 1890; Mayo Robson, "Brit. Med. Jour.," Oct. 11, 1890 ; Vignard, "Prostatomie, These.," Paris, 1890 ; Buckston Browne, "Brit. Med. Jour," March 15, 1890.

Synopsis.—(Vol. 1889, p. 405.) **Quinine,** in decided doses, with **Dover's Powder,** for engorged conditions following exposure to cold ; also **Ergot,**

m|xxx, every two or three hours; in chronically inflamed conditions, **Soda Salicylate**, grs. x to xx.

(Vol. 1890, p. 435.) **Alkalies** and **Colchicum** in cases of gouty prostato-urethritis due to excessive acidity of urine, etc.; in prostatic catarrh inject small quantities of astringent solutions, *e.g.*, **Nitrate of Silver**; occasionally, **Cubebs, Buchu, Sandalwood,** or **Copaiba,** are useful; in chronic prostatitis, use tonics such as **Iron** in non-astringent forms, and **Nux Vomica** or **Strychnine** may be added and also **Belladonna,** if there be micturition during sleep; **Ergotine** is useful if the organ is large and aching is caused by walking, standing, etc.; when prostate is enlarged, soft, and not tender, the **Cold Sitz Bath** at 50° Fh., lowered to 40°, and used once or twice daily for from two to ten minutes, is useful; also **Cold Douche** on perinæum or anus, but **Cold Enemata** are the most useful, two to four ounces of water being thrown into rectum and retained; **Blistering** the perinæum; **Caustic Injections** are used after other means; **Nitrate of Silver Solution,** grs. xx to xxx to ℥j, and 10 minims injected at a time is useful. If prostatitis be due to masturbation or excessive venery, **Ext. Salix. Nigr.a. Liq.,** ℥j thrice daily, checks involuntary emissions; **Ext. Damian. Liq.** is useful for the sexual weakness following prostatitis. In tuberculosis of prostate, the ragged cavities must be washed out, antiseptically washing out the bladder first with small injections of **Boric Acid Solution,** and then injecting ℥ij of **Quinine Solution** (grs. ij to ℥j), or **Iodoform Emulsion** instead of the quinine.

PRURITUS.

W. Allan Jamieson, M.D.

Though a symptom in certain cases, pruritus assumes such a prominent position as to demand treatment on its own account, and various remedies have come into prominence for this purpose. Thus, the analgesic properties of **Menthol** have been utilized to diminish pruritus in various skin-affections, and especially senile pruritus, the pruritus of eczema, that of the itch, and in urticaria.

Dr. Eloy gives the following formulæ for the tincture, liniment, and ointment of menthol.

(1,) Tincture or spirit of menthol :—

℞ Menthol	1 to 3 parts	40 per cent. Alcohol	50 to 60 parts

For external application.

(2,) Liniment of menthol.—This preparation appears to have a more durable action than the preceding. Its formula is as follows :—

℞ Menthol	3 parts	Lanolin	30 parts
Olive Oil	30 parts		

(3,) Ointment of menthol.—The ointment, according to the formula of Saalfield, has the following composition :—

℞ Menthol	2½ parts	Lanolin	100 parts
Balsam of Peru	5 parts		

In certain cases it may be necessary to increase the proportion of menthol in the above preparation up to 10 or 15 per cent. of the excipient when the pruritus is very rebellious, especially when it occurs in chronic eczema.

When pruritus senilis is not complicated with any other dermatosis, M. Besnier recommends the following treatment : (1,) The employment of starch baths ; (2,) The itching parts are bathed every evening in water of 40° C, to every litre of which is added the following solution :—

℞ Acidi Carbolici 10 gram. | Aceti Aromatici 500 gram.

(3,) Then the bathed parts are powdered with the following compound :—

℞ Amyli 90 gram. | Bismuthi Salicylatis 20 gram.

Or, with this powder :—

℞ Acidi Salic. Subt. Pulv. 20 gram. | Amyli 180 gram.

Through light rubbing this powder is made adherent.

REFERENCES.—"Gaz. Hebdom. de Méd. et de Chir.," June 21, 1889 ; "Therap. Gaz.," Aug. 15, 1889 ; "Journ. Cutan. Dis.," vol. vii., No. 84, 1889.

PRURITUS (Vaginæ et Vulvæ). *John W. Taylor, F.R.C.S.*

TREATMENT.—It is not generally known that some of the worst and most tedious cases of pruritus vulvæ may be cured by the application of the galvanic or continuous current.

Pruritus vulvæ is often met with in cases of uterine myoma or polypus, of carcinoma uteri, of endometritis, and of pregnancy, and is then usually associated with a chronic uterine discharge.

It may be difficult or impossible to prove that the pruritus is directly occasioned by the discharge, but the association of the two symptoms is too marked to be at all doubtful.

These cases may be easy to relieve, but are exceedingly difficult to cure.

Where carcinoma or pregnancy is present the case will usually admit of palliative treatment only. If polypus is found it must be removed. But when these are eliminated a considerable number of cases remain, in which distressing pruritus accompanies chronic endometritis and myoma, and it is in such cases that electricity appears to possess a special power for the speedy relief and cure of the pruritus. Its power for the cure of the accompanying endometritis may be none the less marked or certain ; but while a more or less prolonged course is necessary for the satisfactory treatment and cure of chronic endometritis, I have found the symptom of pruritus to disappear quite early in the treatment, and in one case, which had lasted for two or three years, it ceased abruptly after one application. In all the cases referred to the pruritus occasioned great mental and physical suffering. All were treated by galvanism ; the positive pole being applied within the uterus and the

negative to the abdomen by means of the clay electrode. The strength of the current used varied from 70 m. to 200 m. The milder currents are probably as useful as those that are stronger. Out of five cases, of which notes were taken, the pruritus disappeared after one application in one case, after four applications in two cases, after six in one case, and after ten in one case. In this case the symptom had been intermittent, and the effect of the treatment in causing its final disappearance was accordingly less conclusive.

Of these five cases, three were cases of uterine myoma, and two were cases of chronic endometritis without myoma.

It will be noticed that the use of electricity in pruritus is recommended for a special class of cases. Pruritus due to diabetes, parasites or eczema, needs the treatment appropriate to these conditions, the **Boracic Lotions** and **Ointments** being the most generally useful.

Synopsis.—(Vol. 1889, p. 406.) **Cannabis Indica**, ♏x t.d., increased up to ♏xx or xxx, well diluted, taken after meals; **Tinct. of Gelsemium**, ♏x, half hourly, until ʒj is taken; **Nitrite of Pilocarpine**, gr. ⅙, subcutaneously at night, and when wheals appear, **Atrop. Sulph.**, gr. $\frac{1}{100}$, in pill, at bed time. *In Pruritus Senilis*, **Sulphate of Potassium Baths**, and 1 or 2% **Carbolic Acid** solution dabbed on the spots. In pruritus of genitals bathe with ℞ Carbolate of Sodium, xxv grammes; Cologne Water, lxxv grammes; Glycerine, c grammes; Water, ccc grammes; and use compresses soaked in the following, ℞, Aq. Dest., ccc grammes; Alcohol, c grammes; Cocainæ Hydrochlor., lxxv centigrammes. If patient scratches unconsciously during the night, use as paint, ℞, Ammoniate of Mercury, j gramme; Oxide of Zinc, iv grammes; White Vaseline, xl grammes; Cocaine, xxv centigrammes, M.; or apply ℞ Cocaine, grs. xv; Aq. Dest. q.s., Lanolin, ʒss, M.; bathing in the morning with Lot. Hydrarg. Nigra. Painting with **Tinct. Benzoini Comp.** nightly. *For Pruritus Ani*, **Ammoniated Mercury**, grs. xx; **Adip. Benzoat.**, ʒj, M., or use the **Yellow Oxide** of similar strength, adding **Carbolic Acid**, gr. x, and **Creasote**, ♏xv, or **Camphor**, ʒss. A suppository at bed time of **Ext. Belladonn.**, gr. ss. to j, with **Morphia**; **Salicylate of Soda**; **Peppermint Water**, *locally*; **Continuous Current** has cured pruritus vulvæ. **Ol. Menth. Pip.** as paint (59).

(Vol. 1890, p. 444.) In pruritus senilis, pruritus ani, or itching due to hæmorrhoids, wash with **Lukewarm Water** and good soap, and rub in the following, ℞ Lanolin pur. 30 parts, Vaselini, Ol. Olivæ āā 20 parts, M.; **Cocaine** may be added if itching is very severe. ℞ Cocainæ Hydrochlor $\frac{1}{10}$ to ¼ part, Lanolin Pur. 30 parts, Vaselini, Ol. Olivæ āā 20 parts; **Flowers of Sulphur**, 10%, may be added; **Menthol.** ℞ Menthol gr. xxij to xxvij, Sp. Vin. Rect. ʒj$\frac{5}{8}$. ℞ Menthol gr. xxxvij, Ol. Oliv. ʒij to iij, Lanolin ad. ʒj$\frac{5}{8}$. ℞ Menthol gr. xlviij, Bals. Peruv. ʒiss, Ung. Zinc. Benzoat., Lanolini Pur. āā ad. ʒij, M. **Menthol**, as a 10 to 15% ointment, is very valuable in chronic eczema.

PSILOSIS. (See "Sprue.")

Synopsis.—(Vol. 1889, p. 411.) Small doses of **Rhubarb** and **Epsom Salts**, sometimes benefited; weak astringent lotions and gentle application of **Nitrate of Silver** for the lesions and erosions in the mouth and tongue.

PSORIASIS. *W. Allan Jamieson, M.D.*

The methods in vogue for the treatment of this common and vexatious disease have been so well set forth in a paper by Professor Kobert, of Dorpat, that I cannot do better than reproduce what he has so succinctly said: "Many English and American practitioners prefer the use of **Arsenic** to all other modes of treatment, exhibiting it however in somewhat different ways. One uses the so-called **Asiatic Pills,** another **Pearson's** or **Fowler's** solution, while a third injects it subcutaneously either pure or mixed with some antiseptic substance. In these countries we also find that **Tar-water, Carbolic Acid, Turpentine** (internally and externally), **Copaiba, Phosphorus,** and even **Cantharides** are employed.

"Bulkley specially recommends **Alkalies,** in the form of **Liquor Potassii Acetatis,** or of **Acetate of Lithium** or **Calcium.** He also finds **Iron** and **Cod-liver Oil** of service. According to his experience cod-liver oil may be replaced by ordinary meat-fat, in cases where it is well digested. Next the body pure woollen garments only are to be worn, and thus clad he sends his patients, furnished with the above-mentioned remedies, to reside in a warm and equable climate.

"Gutteling speaks strongly in favour of the treatment by large doses of **Potassium Iodide,** recommended in 1885 by Haslund. He gradually increases the dose until the patient is taking as much as 57 grammes (℥ij) daily. One patient during his course of treatment took in all about 3·6 kilogrammes (8 lbs.) of the salt. In spite of these veterinary doses he states that he has rarely seen signs of iodism produced. The drug is especially valuable in recent cases. Barduzzi confirms the usefulness of the treatment, even in very inveterate cases. The smallest daily dose he gave was 7 grammes (108 grains).

"Bulkley discredits the value of the much-praised sulphuretted mineral waters, and thinks there is little use in chrysarobin, anthrarobin, or pyrogallic acid. He recommends, on the other hand, the use of **White Precipitate** applied as an ointment (Unguentum Hydrargyri Ammoniati) which is more serviceable than any of the three drugs just named. Besnier speaks well of a 10 per cent. ointment of **β-Naphthol** rubbed in every night. In the morning the ointment is washed off with soap and warm water, and the skin dusted with starch powder. Kaposi recommends a 15 per cent. ointment of **β-Naphthol** for the same purpose.

"Mr. Jonathan Hutchinson treats psoriasis with **Chrysophanic Acid,** combined with **White Precipitate** ointment and **Liquor Carbonis Detergens** (Wright). The patient is told to wash the spots thoroughly at night, and then, having warmed the skin by exposing it to an open

fire, to rub in the ointment. At the same time he takes **Arsenic** internally.

"Behrend in 1882 recommended the crude drug **Goa Powder** instead of chrysophanic acid, as being cheaper. Napier gave the acid internally in doses of ½ a grain. Behrend, again, in 1888 substituted for the acid anthrarobin, but this has come but little into use. Baths containing **Corrosive Sublimate** and **Sal Ammoniac** have been more than once proposed, sometimes the entire body, sometimes only the affected parts being immersed. For the latter purpose Giles de la Tourette prescribes a strength of 1 part of each salt in 2000 parts of water. Casarini suggests **Perchloride of Iron** in solution, or as an ointment with 30 times its weight of lard. Culling states that **Carbolised Glycerine** with **Alkaline Baths** and **Arsenic** internally is a very effective means of treatment.

"It will be seen that even in this disease, whose diagnosis is so easy and the success of whose treatment can so readily be determined, practitioners still vary very widely in their views of treatment. I would like to point out how far from rational is the practice of combining the several remedies, such as arsenic internally with baths and chrysophanic acid externally. This precludes the possibility of determining which of the various means employed is the really active one. Our duty is to do all we can to bring therapeutic criticism to bear at the bedside ; such combinations of diverse remedies put true criticism out of the question, and tend only to confused and confusing conclusions. The combination, moreover, rarely benefits the patient, and much more frequently does him harm. We can only acquire what I may call the right of combination when we have specially studied each remedy, and by the experience of thousands of cases determined accurately its proper action.

"Hydrochlorate of hydroxylamine, which has now been used for some time in Germany, appears to have attracted no general attention in other countries. Hydrochlorate of hydrazine is twice as strong ; but both are strongly toxic when given internally. Less poisonous and therefore preferable both for internal and external use is **Hydrazine Salicylic Acid**, a substance investigated by myself and described in the "Deutsche Med. Wochenschrift," 2, 1890.

"It is to be remarked that the so-called chrysophanic acid is wrongly named ; the drug employed, in Germany at least, is really chrysarobin. By a peculiar arrangement it is laid down that the German druggist must dispense chrysarobin when the physician prescribes chrysophanic acid *for external use*. What he is to use when the acid is prescribed for internal use is left to his own discretion. Strictly

speaking, he should dispense the acid, but as I have proved by experience, he generally uses chrysarobin. This ambiguity can only be removed by physicians first clearly understanding the difference between the two substances, and secondly by their ceasing in prescriptions to substitute the one name for the other.

"As I have elsewhere stated, chrysophanic acid is an oxidation-product of chrysarobin, formed according to the following equation :—

$$\underset{\text{Chrysarobin.}}{C_{30}H_{26}O_3} + 2O_2 = 3H_2O + 2\underset{\text{Chrysophanic Acid.}}{C_{15}H_{10}O_2}.$$

"Chrysarobin is one of the strongest reducing agents we possess, and is therefore properly classed by Unna with the keratoplastic drugs. Its action in psoriasis depends simply on its power of withdrawing oxygen from the epidermal structures. Chrysophanic acid is much less powerfully reducing, and is therefore much less serviceable for external use in this disease. When taken internally, chrysarobin becomes converted, according to Lewin, into the acid, and appears as such in the urine. Given in this way it is therefore adapted to aid the external application of the ointment, just as the action of sulphuretted baths is aided by the internal exhibition of calcium sulphide. Chrysophanic acid when injected passes unchanged into the urine, and can therefore have but little therapeutic effect. The inference is that chrysophanic acid should not be given internally, but always chrysarobin. When the dose of the latter is as large as 50 milligrammes (¾ grain) I have constantly found that signs of poisoning (vomiting, diarrhœa, etc.), are produced. We should therefore begin with 10 milligrammes (say ⅛ grain) and increase this cautiously.

"The action of pyrogallic acid (otherwise called pyrogallo) in psoriasis is from the chemical point of view very similar to that of chrysarobin ; in other words it is a powerful reducing agent. While however in the case of the latter we know how it is transformed within the body, the changes undergone by pyrogallic acid are little understood, as it appears to break up in part into a number of substances not easily analyzed. The action of both these drugs on the skin is notably increased by alkalies, which also intensify their discolouring effect on the skin. The stains of both can be effaced by washing with a dilute acid, such as citric acid."

References.—"New York Med. Jour.," July, 1889 ; "Weekblad van het Nederland. Tijdschr. v. Geneesk," 17, 1889 ; "Gaz. degli Ospitali, 17, 1889 ; "Arch. of Surg.," July, 1889 ; "Virchow's Archiv.," Oct., 1889 ; "Monatsh. f. Pract. Dermat.," 1, 1889 ; "Therap. Monatsh.," p. 124, 1889 ; "Arch. f. Derm. u. Syph.," 2, 1889 ; "Annali di

Chim. e. d. Farmacol," 2, p. 102, 1890; "Schmidt's Jahrbücher, vol. clxxxv., p. 233; "Practitioner," April, 1890.

Synopsis.—(Vol. 1889, p. 413.) Arsenic, subcutaneously, ♏x, increased to xx (if well borne) injected into buttock after freezing skin; Liq. Arsenicalis; Liq. Sod. Arseniatis, or the Asiatic Pill; Tinct. Lupuli., ʒss doses, seem to assist toleration of arsenic. Alkalies; Carbolic Acid; Tar; Phosphorus; Copaiba; Ol. Morrh.; Carbonate of Ammonia; Turpentine, ♏x t.d.s., post. cib., and increased to ♏xxx; Cantharides; Vin. Antimon. Tart., ♏v to x; Chrysarobin. *Locally*, ℞ Glyceride of Starch, c parts; Green Soap, v parts; Oil of Cade, c parts, M., rubbed in every morning. Chrysarobin, 10%, dissolved in 10% Gutta Percha solution in Chloroform; to be painted on once a week. ℞, Chrysarobin, grs. x; Lanolin, ʒj; Pyrogallic Acid, ʒjss to ij, in ʒij, Flexible Collodion, with Salicylic Acid, ʒss; Ung. Picis Liq.; Thymol, grs. xv to ʒiij to the ʒj as ointment or lotion; Turpentine, pure or with Olive Oil; Alkaline Baths, *e.g.*, Pot. Carb., ʒij or iij to xxx gallons of water at a temperature of 95° or 98°, useful when eruption is widely spread and not acute. Mineral Waters of Bath, Harrogate, Kreuznach, Aix-la-Chapelle, and Leuk. Anthrarobin, 10 or 20% ointment (p. 14); Delphinium Staphisagria Seeds (p. 37).

(Vol. 1890, p. 445.) Potassium Iodide in large doses; Anthrarobin, 10 or 20% strength tincture or ointment (with Vaseline) applied daily after washing with over-fatty Potash Soap, and thorough scrubbing with a nail-brush. ℞ Ac. Chrysophanic gr. x, Liq. Carbonis Deterg. ♏x, Hyd. Ammon. gr. x Adipis Benz. ʒj. M.; to be rubbed in for half-an-hour after taking a warm bath; and Arsenic is often used internally at the same time. ℞ Ammon. Carb. 10·0, Lanolini 25·0, Cerati Galeni 50·0, M.; apply twice daily to remove scales. Over-fatty Hydroxylamin Soap rubbed in three times a day and allowed to dry. ℞ Amyli Glycerine 100·0, Saponis Mollis 5·0, Olei Cadini 100·0, M.; to be applied each night and a bath with tar soap, taken in the morning.

PUERPERAL STATE (Disorders of). *Arthur H. N. Lewers, M.D.*

Dr. Hamilton contributed a paper on puerperal temperatures to the "Australasian Medical Gazette" of Sept., 1889. His conclusions (which are very much in harmony with prevailing opinion here) are as follows: —

(1,) That in a certain number of cases we shall always have a rise of temperature from causes quite beyond our control; (2,) That this number may be reduced to the lowest possible limits by strict attention to antiseptic precautions; (3,) That instrumental interference causes a marked increase in the percentage of high temperatures, and that therefore, in cases where such interference is necessary we should redouble our precautions against septic influences; (4,) That in every case the perineum should be the object of our most careful solicitude. That we should guard it in every way against injury, and when even an apparently trivial tear takes place that we should at once hasten to repair the damage.

Treatment of Puerperal Eclampsia.—The general principles to be borne in mind are: (1,) To avoid, as much as possible all kinds of

irritation, such as vaginal examination, passing the catheter, etc., except when the patient is completely under the influence of chloroform; (2,) To expedite the labour as much as possible without violating any of the ordinary rules of midwifery.

The chief therapeutic measures to choose from are: (*a*,) **Bleeding**; (*b*,) The administration of **Chloroform**; (*c*,) The hypodermic injection of **Morphia**; (*d*,) **Purgation**; (*e*,) The hypodermic injection of **Pilocarpine**; and (*f*,) The administration of **Chloral** and **Bromide of Potassium** per rectum.

It is well to remember that the least serious cases are those in which the convulsions occur for the first time after delivery. Other things being the same the danger varies directly with the number of the fits. Also the number of the fits varies with the amount of peripheral irritation. When the fits occur therefore for the first time during labour, there is the mechanical irritation attending the process of delivery, and the pain of the uterine contractions themselves at work tending to produce repeated attacks.

Bleeding (to the extent of twelve ounces) is only suitable for cases where the fits begin during or before labour, and where there is a pulse of high tension. It is best not to depend on bleeding alone but to rely chiefly in all cases on the administration of **Chloroform**. This should be given in the first instance to the surgical extent; afterwards it may be given intermittently as required according to the frequency of the fits. In this way a patient may be kept for many hours more or less under the influence of chloroform. In most cases it is desirable to give an active purgative: for example ♏j of croton oil in ʒj of milk. In general, chloroform, with bleeding in certain cases, and purgation are the best remedial agents.

The danger that the respiratory passages may become blocked owing to the profuse salivation, set up by pilocarpine, should not be forgotten if this drug is being employed.

REFERENCE.— "Therapeutic Gazette," Nov. 15, 1889.

Synopsis.—(Vol. 1889, p. 419.) *For Puerperal Fever,* Salicylate of Soda, grs. viijss hourly, and raised if necessary to grs. xv hourly, with use of **Alcohol** in puerperal sepsis.

PURPURA.

Synopsis.—(Vol. 1889, p. 419.) Rest, Astringents; Ergot, by mouth, or Ergotine, subcutaneously; Turpentine; Iron; Quinine; Faradisation. ℞ Ac. Phosph. dil. gtt. x; Strychniæ Sulph., gr. $\frac{1}{60}$ in water, t.d.s.; also Fluid Extract of Witch-hazel, gtt. x to xxx t.d. Geranium Maculatum, grs. x to xl (p. 42).

RABIES.

Synopsis.—(Vol. 1890, p. 449.) Pencilling the throat with 5% solution of **Cocaine** relieved spasms and thirst in one case.

RACHITIS. *Henry Dwight Chapin, M.D., New York.*

Dr. L. B. Mandelstamm states that **Phosphorus** in small doses is the best treatment, as it results in no disturbances of the gastro-intestinal tract. The following mixture was used :—

℞ Phosphor.	0·01	Gummi Arabic.	
Olivenöl	10·0	Syr. Simpl.	āā 5·0
		Aq. Dest.	80·0

M. Sig. A teaspoonful daily.

Dr. H. W. Berg, in discussing rachitic pseudo-paraplegia states that the main object of treatment is to counteract the effect of rachitic malnutrition. These children should have a great deal of milk ; cod liver oil should be given unmixed, and phosphorus in the following prescription :—

℞ Phosphori	gr. i	Spt. Menth. Pip.	♏x
Alcohol Absolut.	♏cccl	Glycerinæ	ʒij.

M. Sig. For a child of two to four years of age 6 minims t.i.d., to be increased 1 drop weekly until 10 drops are given.

For younger patients correspondingly smaller doses will be best. Other tonics, such as **Iron,** small doses of **Nux Vomica**, etc., are indicated in the anæmia accompanying the rachitis. The local treatment consists chiefly of **Massage** and **Electricity**.

Dr. Kassowitz considers that inflammatory hyperæmia of the osteogenetic tissues plays the principal rôle in the production of rachitis. If his idea is correct the administration of the different salts of lime is useless, since the ordinary food contains them in sufficient quantity. He administers phosphorus in conjunction with cod-liver oil, in the proportion of 0·01 to 100. A sufficient dose is a coffeespoonful of oil daily, containing half a milligramme of phosphorus. If there be any reason for not giving the oil, lipanine may be substituted for it. An emulsion of phosphorus and lipanine may be given as follows :—

℞ Phosphori	grm. 0·01	Sac. Alb.	
Lipanine	grm. 30	Gum. Arab. Pulv.	āā grm. 15
		Aq. Destil.	grm. 40

M. Sig. Take a coffeespoonful daily.

Dr. Füth advises the use of **Compressed Air** by rachitic children. They thus obtain better ventilation of the lungs, tissue changes are more active, and the entire condition of the patient improves. The tendency to atelectasis becomes less marked, beginning rachitic deformities of the thorax are checked, and extensive deformities improved, or even cured.

Dr. Galatti has used **Lipanine** as a substitute for cod-liver oil in tuberculosis, scrofula, and rachitis. It is easily taken, and well tolerated, neither malaise, diarrhœa, nor vomiting following. It may be

given pure two or three times daily in dessertspoonful doses, or combined with a few drops of essence of peppermint or anise :—

℞ Lipanine grm. 10 | Syr. Menth. Pip. grm. 50.
M. Sig. A small spoonful three times daily.

REFERENCES.—"Jahrbuch. f. Kind.," Bd. xxx., s. 409-434; "Med. Rec.," Nov. 16, 1889; "Rev. Mens. des. Mal. de l'Enf.," March, 1890; "Jahr. fur Kinderh.," xxx., 3.

RECTUM (Excision of). *Herbert W. Allingham, F.R.C.S.*

Excision of the rectum may be undertaken in any form of cancer which does not necessitate the removal of more than four inches or five in the male, and an inch less in the female. The excision may be partial or complete, and the latter mode, *i.e.*, extirpation, has found most favour with the French school of surgeons. In the usual mode of excision for cancer the deep dorsal incision is the key to the operation. Reference to an excision operation for another purpose will be found in the article on "Procidentia Recti" (p. 418). Here it will be sufficient to describe the operation which appears to be the best in the opinion of the present writer, and after that to make allusion to sundry criticisms on, and modifications of, Kraske's method of extirpation.

The most satisfactory way of excising the rectum for cancer is a modification of Professor Verneuil's posterior dorsal incision. By that method a bistoury is passed (upon the finger) into the rectum, as far as the upper limit of the growth, and then a cut is made right down to the sacrum and tip of the coccyx, the entire bowel being divided dorsally. In the modified method a sharp-pointed bistoury is introduced through the skin a little below the anus, and this is made to travel in the cellular tissue up to the top of the growth, but entirely outside the rectal tube. The operator should then cut down to the sacrum and coccyx, and bleeding should be arrested by the placing of a sponge in the incision. A scalpel should then be used to cut deeply all round the rectum in the space between the internal and external sphincters. The external sphincter which is thus left attached to the skin should then be divided. The finger being in the rectum and the thumb in the cut between the sphincters, one blade of a pair of long-blunt-pointed scissors should now be put into the posterior cut, and the other blade should be pushed into the cellular tissue of the ischio-rectal fossa. The cellular tissue between the blades must then be cut, first on one side and then on the other, and for the successful management of this both right and left hand must be used dexterously. Sponges are then to be introduced into the incisions on either side of the bowel, and broad flat retractors must separate the outer parts from the bowel.

The perineal part should then demand attention. The finger being

still in the bowel and the thumb outside it, the amount of the wall of the gut between the finger and thumb can apprise the operator as to how near the rectum he is cutting. If the scissors are made to touch the thumb-nail and the rectum is drawn backwards while the cut is made, there should be no danger of wounding the urethra or bladder, or of incising the bowel. The sponges may be removed when the rectum has been separated from the tissues to an inch or more above the growth. The separated rectum can then be pulled down, and crushed with a screw-crusher, removed by an *écraseur*, or if hæmorrhage is not feared cut off with scissors. Before the lower part of the bowel is cut off, the upper part should be secured with a vulsellum to prevent it slipping out of reach and bleeding freely. In this manner the rectum can be removed in ten minutes with the greatest ease.

If the above details are attended to, there is little fear of hæmorrhage, and the quicker the operation the less blood is lost. The position of the finger in the gut which is still a tube, and of the thumb outside the rectal wall, gives greater speed and security; this follows from the non-division of the bowel at the time of the dorsal incision. Further, as the external sphincter is left in the outer skin, sphincter-power is obtained after the operation.

Foreign surgeons have discussed Kraske's method of extirpating the rectum through the sacral region, and of preserving the sphincter by attaching it to the upper end. The mortality from this method is said to be 20 per cent., and frequently the main aims of the operation are not attained and other modes have to be substituted, *e.g.*, colotomy. M. Schwartz has used Kraske's method for an annular cancer two inches above the anus, making an U-shaped incision in the sacral region, and in the centre of that a vertical cut down to the anus. The rectum has been disengaged freely, the growth removed, and the intestine severed above and below. Herr Rehn, of Frankfort, has modified Kraske's operation; he has made an incision on the left side of the sacrum between the third and fourth sacral vertebræ, and after removal of the growth has made circular closure of the intestine. He has also resected the sacrum, separated the tumour, and put in a tampon. Ten days later he has cut out the tumour and stitched the intestine. Herr Rehn advocates the division of the operation into two stages.

REFERENCES. — Allingham, "Diseases of Rectum," 5th edition, 1888; Kraske, "Medical Press," June 11, 1890.

RECTUM (Procidentia Recti). *Herbert W. Allingham, F.R.C.S.*

There is considerable confusion of ideas with regard to the use of the terms, prolapse of the rectum, and procidentia recti. The term prolapse should be confined to a protrusion outside the anus of a portion or

portions of the mucous membrane, not in its entire circumference, and not affected by piles ; ordinary internal hæmorrhoids, of course, may also be prolapsed. The term procidentia should be applied only to the descent of the whole circumference of the rectum. This may occur in three ways. The entire circumference of the mucous membrane, or all the coats of the rectum, may appear outside the anus. The upper part of the rectum may descend through the lower part, and then appear outside the anus ; the upper part of the rectum may descend through the lower part but not appear outside the anus. The two latter conditions are kinds of intussusception.

May a lengthy Mesentery cause Procidentia?—A possible cause of procidentia may be found in the length of the mesentery. In the normal condition the second portion of the rectum is covered with peritoneum only on its anterior surface, and is fixed to the sacrum at its posterior part. If, during development, this portion of the bowel becomes completely covered with peritoneum and be connected with the sacrum by a mesentery, that of itself might occasion procidentia.

For procidentia in children the application of strong **Nitric Acid** is the best form of operative treatment and is likely to give permanent benefit. In adults the use of this acid may merely give temporary good and may have bad consequences. Injections of **Carbolic Acid** and of various irritants are not very advisable.

Removal of portions of the gut in slight cases of the two first conditions may cause temporary relief. Large procidentia have been removed by the *écraseur*, and Dr. Klebey, in very severe cases has used the electric ligature. After the ligature had been tied, he made (just below it) a longitudinal incision, two inches long, through the descended gut, and opened the sac formed by the drawing down of the peritoneum. The ligature was made firm and a protruding loop of intestine was pushed back into the peritoneal cavity. The electric ligature prevented all hæmorrhage, and the procidentia was cut off with scissors an inch below the permanent ligatures. **Chloride of Zinc** was afterwards applied.

The application of the hot iron or Paquelin cautery, first recommended by Dr. Van Buren, of New York, is the best operation. The intestine is firmly held out from the anus, and with the iron cautery at a red heat, four or more longitudinal stripes are made from the base to the apex of the protruded intestine, it being advisable to burn less deeply near the apex than at the base. The intestine is then oiled and returned within the anus, and the sphincters on either side are partially divided by a sawing motion of the hot iron.

In the third form, when the procidentia does not appear outside the

anus, by the use of the speculum and retractors the mass may be burnt by the actual cautery in three or four places. If the procidentia is high up in the bowel and the cautery cannot be used, the following plan is suggested. A small incision might be made through the anterior abdominal wall on the left side just above the outer third of Poupart's ligament. The fingers should then be introduced into the abdomen, the rectum caught hold of, and pulled up as high as possible so as to straighten the rectal tube and remedy the procidentia. A silk thread should then be passed through the mesentery, and the latter be fastened to the abdominal wall. The wound should be closed in the manner pursued in abdominal section. Thus a firm adhesion might be formed, and any further intussusception of the upper into the lower part of the rectum be prevented.

Brigade Surgeon K. McLeod, of the Calcutta Medical College, has performed a new operation for procidentia recti, after milder measures have failed. The left hand was passed into the rectum, the fingers being made prominent above Poupart's ligament, and the small intestines being removed inwards. A long steel acupressure needle was passed through the abdominal parietes into the cavity of the gut, guided across its interior by the fingers, and passed outwards till it emerged about three inches from the point of entrance. This needle was placed parallel to and about one inch above Poupart's ligament. Another needle was inserted through the bowel and abdominal wall about three inches above the first one and rather external to it so as to secure the intestine in an oblique position from below upwards and outwards. These two needles fixed the upper end of the rectum, or the lower end of the sigmoid flexure, in the required position. The hand was then withdrawn. An incision about three inches long was made between the needles at right angles to them, and in the long axis of the intestine as near as possible to the middle of the applied part. The layers of the abdominal wall were, one by one, carefully divided to the same extent till the parietal peritoneum was reached. The left hand was re-introduced into the abdomen in order to avoid puncture of the mucous membrane, and guided by the fingers two series of loops of silk thread were inserted into the interior of the gut, four on each side, with a handled needle, in the manner described in the article on gastrostomy, in "Heath's Dict. of Pract. Surg.," about an inch apart from one another, so that the serous and abdominal coats of the intestine might be attached to the abdominal wall. A series of these loops, also penetrating the two outer walls of the intestine, were placed between successive pairs of these rows in order to bring the lips of the wound together, and between these, smaller horse-hair stitches of

adaptation were inserted. Antiseptics were employed. Under favourable circumstances the operation was successful.

Mr. Frederick Treves has performed excision on what he terms prolapse of the rectum. The conical-shaped prolapse was drawn out to its full extent, and the mucous membrane which formed its outer wall was prepared for separation around the entire base of the cone, the knife traversing the skin close to its line of junction with the mucous membrane. This tunic was separated from the prolapse by scissors, aided by traction, and was everted down to the apex of the cone. The protrusion was bare of mucous membrane, and was quite hard and firm except at its anterior part close to the anus ; here it was flaccid, and there was evidence of protrusion of the peritoneum. It was then cut across at the level of the anus, *i.e.*, at its very base. The anterior wall was first divided, the peritoneal cavity opened and the opening plugged with a sponge ; the rest of the mass was quickly severed with scissors. The cut end of the bowel, muscular and mucous coats together, was seized with pressure forceps, held in position, and all bleeding points secured. The plug of sponge being removed, the peritoneal wound was closed by means of six or seven points of the finest chromicised cat-gut. The divided end of the bowel was attached to the margin of the anus, the sutures involving the whole thickness of the wall of the rectum and as much as possible of the subcutaneous structures about the anus. Ligatures were applied to any thick points found on the temporary removal of the pressure forceps to prepare each segment of the divided rectum for fixing in place.

REFERENCES.—Herbert W. Allingham, "Diseases of the Rectum," 5th edition, 1888 ; "Lancet," Feb. 22, March 1, and July 19, 1890.

RECTUM AND UTERUS (Reflected Nerve Symptoms in disease of).

Samuel Craddock, M.R.C.S.

Many and varied are the nerve symptoms met with in connection with departures from health of the rectum and uterus, symptoms that are purely subjective in character and often recurring at the furthest point from the seat of lesion. They are not met with in every case of disease in either of these parts, but they are very prone to develop themselves, more especially in those subjects having a decided neurosis. It has been my lot to see many such cases treated either for hysteria or gout without the real *fons et origo* being appreciated. That they resemble many of the symptoms belonging to both hysteria and gout I do not for one moment doubt. But as I have invariably seen them vanish after the disease in the rectum or uterus has been cured I think one is perfectly justified in calling them referred nerve symptoms. We have other examples that are generally recognized as such,

viz., convulsions due to ascarides in children ; pain in the shoulder and at the root of the neck arising from carious teeth ; ear-cough, connected with certain diseased conditions of the ear ; headache and epilepsy from forcing the accommodation in severe hypermetropia ; rheumatoid arthritis following uterine irritation (Ord), etc. What, then, are the nerve symptoms associated with rectal and uterine mischief? They have a wide range, and may be simply dyspeptic, indicative of a sluggish liver, tingling in the arms and legs, quasi-rheumatic pains, especially affecting the hip joints, neuralgias, local or remote, slowing of the heart's action, giddiness, mental phenomena, ranging from irritability of temper and mere depression of spirits to absolute insanity. The majority of these symptoms may coexist, or one of them alone may be present. Some of these symptoms have long been recognized as having their causation in either rectal or uterine disease. The late Mr. John Hilton, in his celebrated work on "Rest and Pain," was the first to allude to pain in the heel as frequently occurring in persons suffering from painful ulcer of the rectum. I have frequently observed the same pain in women suffering from chronic endometritis. Mr. Bryant, in his work on "Practical Surgery," alludes to dyspeptic symptoms as being commonly associated with hæmorrhoids. Two cases have come under my own observation that had been treated for disease in the hip joints : (1,) That of a male who had been treated with rest in bed and a Thomas's splint for hip-joint disease, when his symptoms vanished after operation by Mr. Lowe, of Bath, for hæmorrhoids ; (2,) That of a female, aged forty-six, who was sent to Bath to undergo treatment by the waters for rheumatic arthritis of both hip-joints, but who, being unrelieved at the end of six weeks, determined, before leaving Bath, to seek advice at the Royal United Hospital. She came on my day, and being unable to walk was carried into my consulting room at the hospital. Her story was a pitiable one—that for a long time the pains in both her hips were so severe, she had been quite unable to walk. After the closest examination, I could detect nothing whatever the matter with her hip-joints, but on examining the uterus she was found to have very extensive ulceration of the os and cervix. The ulcer was well cleaned and dressed with a saturated solution of carbolic acid in glycerine, and she was then taken to her lodgings, with instructions for her to come the following day and have her ulcer again dressed by the house physician, Dr. Marshall, to whose surprise, equally with her own, she walked unassisted from the cab into the consulting room of the hospital.

In both these cases the pains were evidently a referred neurosis. The

rapid way in which they vanished after treatment proves their true origin.

With this brief description of referred nerve pains, or subjective symptoms, we will consider what is meant by reflex nerve action, and what are the necessaries to produce it: (1,) A sentient surface connected with afferent nerves, in turn connected with a central nerve cell or group of nerve cells, associated with an efferent nerve or nerves, distributed to structures capable of recognizing and being influenced by their inherent power. These reflex phenomena originate in the spinal cord, and the grey matter of the spinal cord is considered as a multitude of reflex centres. Now, I believe that the majority of reflex phenomena following certain diseased conditions of the uterus and rectum, are caused by the vaso-motor nerves producing a condition of arterial tension. The vaso-motor centre resides in the medulla; at the same time other parts of the spinal cord are capable of acting as vaso-motor centres, while the fibres of the vascular areas may be considered to be brought into functional relation with the afferent nerve. Now, these vaso-motor nerves have three different actions and may be considered as vaso-dilator, vaso-constrictor, and of a mixed character, giving rise to dilatation or constriction according to circumstances. I believe, however, we have to deal chiefly with the vaso-constrictor nerves. It is a fact that the vascular areas of internal parts of the body bear such relation to certain nerves that dilatation of the small arteries follows division of these corresponding nerves, which are called vaso-motor nerves and exist in both the sympathetic and cerebro-spinal nerves; in other words, the natural tone of the artery or arteries is lost; so may their tone be increased by undue constriction, giving rise to increased arterial pressure, either of which conditions may be exerted by nervous impulses, originating in the central nervous system itself, or set going by afferent nerves passing to the cerebro-spinal system from some sentient surface. These facts, established by the physiologist, are, I think, sufficient to justify one in believing that the reflex phenomena, with which we are concerned, are brought about by means of the vaso-motor system whose centre resides in the medulla and grey matter of the cord.

The external sphincter is the muscle of chief interest in rectal surgery, for on it are most frequently situated ulcers and hæmorrhoids. This muscle is supplied either by a branch from the fourth sacral nerve, or by one from the pudic nerve. The pudic nerve is connected with the same portion of the cord as the sciatic, therefore, a painful impulse passing up the pudic may create disturbances in the cord, which disturbances may escape beyond their proper bounds, and

thus affect the regions belonging to the sciatic and other nerves. Just as those neuralgias depending upon carious teeth, and extending over the whole region of the fifth nerve, or even to the branches of the cervical plexus, may be caused by a painful impulse ascending a single filament of the nerve. In this way we may account for local neuralgias or quasi-rheumatic pains. The connection of the sympathetic with the rectum and uterus in the accompanying plate drawn by Ludovig from section prepared by Leveillè, is well shown.

I need hardly remind the reader that the sympathetic ganglia consist of three to five on each side in the pelvis; the lumbar ganglia consist of five, and the thoracic ganglia of twelve on each side. These various ganglia are connected by two branches with each spinal nerve, and by their branches furnish the various plexuses in the pelvis, abdomen, and thorax. These two sets of ganglia are connected by branches in front of the coccyx and form the ganglion impar. In the neck are three ganglia named respectively, superior, middle, and inferior cervical.

The sympathetic system supplies the rectum by means of the inferior hypogastric plexus, which is a continuation of the hypogastric plexus, which, in its turn, is formed by filaments from the aortic plexuses, the lumbar ganglia and two first sacral ganglia.

The inferior hypogastric plexus, in addition, receives branches from the second, third, and fourth sacral nerves, and a few filaments from the sacral ganglia. This inferior hypogastric plexus supplies the rectum by giving off the inferior hæmorrhoidal plexus, whilst the superior hæmorrhoidal plexus is derived from the left side of the aortic plexus. Thus we see that the sympathetic supplying the rectum is really derived from the aortic plexus, receiving also a few branches from the second, third, and fourth sacral nerves.

The diagram (*Plate 4*) shows well the distribution of the sympathetic to the rectum and uterus, and also its connection with the spinal nerves.

The aortic plexus derives its filaments from the semi-lunar ganglia, renal plexuses, and some of the lumbar ganglia; the two semi-lunar ganglia are immediately connected with the solar plexus, and each at its upper part is connected with the two splanchnic nerves. The solar plexus gives off the gastric plexus, and joining with branches from the right pneumo-gastric, supplies the stomach; it gives off also the hepatic plexus, which receives branches from the left pneumo-gastric and right phrenic nerves, and distributes its branches in connection with the hepatic artery to the substance of the liver. The two splanchnic nerves rise from the thoracic ganglia, the greater from the

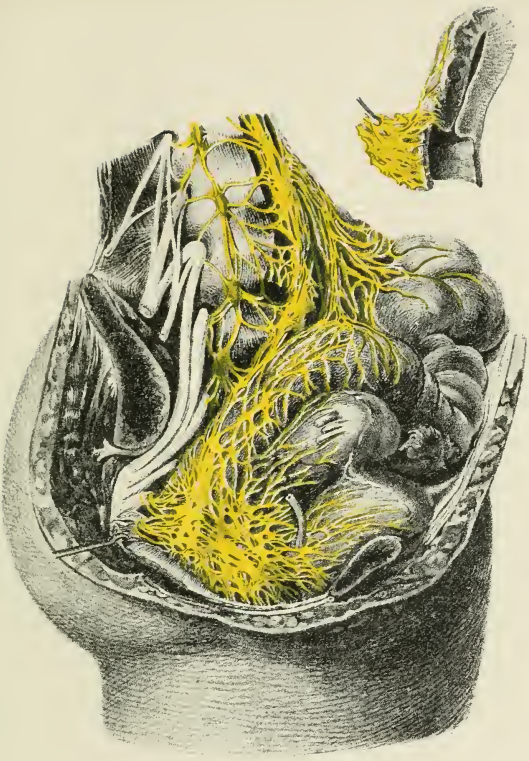

PLATE IV. *Diagram illustrating the Nerve supply of the Pelvic Viscera after a drawing by Ludovig, from section prepared by Leveillé.*

sixth, seventh, eighth, ninth, and tenth, and the lesser from the tenth and eleventh ; the third splanchnic nerve arises from the last ganglia, the twelfth, and terminates in the cœliac-plexus.

I think, therefore, we are able to reason why dyspeptic and liver disturbances should co-exist with disease in the rectum and uterus through the sympathetic. I believe that the dyspepsia met with is atonic caused by irritation set up in the sympathetic system leading to arterial tension, and consequently a defective supply of blood to the part. Similarly, I believe the liver to be affected through this arterial tension, which accounts for the depression so often met with in persons subject to hæmorrhoidal and uterine disease.

The cardiac nerves are six in number, three on each side, named the superior, middle, and inferior ; they are derived, respectively, from the superior, middle, and inferior cervical ganglia. The superior cardiac plexus is made up of branches originally derived from the three cervical ganglia, and the cardiac branches of the recurrent laryngeal and pneumo-gastric nerves. It principally furnishes the inferior and posterior coronary plexuses, and gives off a few branches to the auricles of the heart. The inferior and posterior coronary plexuses arising respectively from the superficial and deep cardiac plexuses, supply the inferior and posterior surfaces of the heart.

After receiving branches from the seventh and eighth spinal nerves, the inferior cervical ganglion forms a plexus around the vertebral artery and supplies branches to the sub-clavian artery. The middle cervical ganglion receives branches from the fifth and sixth spinal nerves, and amongst others gives off branches that join cardiac branches from the recurrent laryngeal and enter the deep cardiac plexus.

The superior cervical ganglion is connected with the four upper spinal nerves, with the hypoglossal, and with both ganglia of the pneumo-gastric. Its superior or cranial branch divides in its course through the carotid canal in the temporal bone into an outer and inner branch ; the outer forming the carotid plexus, and the inner the cavernous plexus. The carotid plexus communicates with the sixth nerve, the spheno-palatine and casserian ganglia, which sends branches to the dura mater.

The cavernous plexus communicates with the third, fourth, fifth, and sixth nerves, and with the ophthalmic ganglion, whose branches are ultimately distributed to the ciliary muscle and iris. The sympathetic system on each side meets below at the ganglion impar, and above at the anterior communicating artery of the circle of Willis.

We thus see that there is a direct unbroken line of the sympathetic

nerves acting upon the vessels that supply the different parts of the body, and that when excited it is not unreasonable to suppose they may give rise to a condition of arterial tension producing anæmia of the parts they supply.

One word as to the slowing of the heart. Certain branches of the vagus nerve have the credit of inhibiting the heart's action, probably those branches that go to the superficial and deep cardiac plexuses. If so, doubtless they are responsible for the slowing of the heart's action I have so frequently noticed.

Lastly, the nerves of the uterus arise from the hypogastric plexus, so that its association with the sympathetic is practically identical with that of the rectum, and accounts for the same train of nerve symptoms existing when that organ is affected by disease.

The diseases of the rectum giving rise to these neurotic phenomena, are ulcers, hæmorrhoids, and papillomatous tumours, small fissures, etc., in fact, any affection of a chronic character giving rise to extreme spasm of the sphincter; whilst chronic affections of the uterus are ulcers of the os and cervix and endometritis with or without flexions.

To summarise this paper—I wish to emphatically state that the subjective symptoms thus briefly described often co-exist with actual pain at the seat of the disease, especially as regards the rectum, but they are often met with when no pain is experienced, in which cases the disease is situated well within the external sphincter, the contraction of which does not develop pain, notwithstanding, in its contraction it becomes tense and hard, and presents a funnel-shaped appearance. In uterine cases dysmenorrhœa, more or less, generally exists, with a discharge from the uterus characteristic of the case, whether it be endocervicitis or endometritis.

That these phenomena are caused by irritation of the sympathetic system of nerves causing a condition of arterial tension which means a defective supply of blood to the various organs must, I judge, be obvious. I would add, I consider it of paramount importance, when these vague symptoms exist, that we ought to inquire minutely into the condition of the rectum and uterus, and that such enquiry is particularly necessary in the case of chronic dyspeptics.

RENAL CALCULUS. *Robert Saundby, M.D., F.R.C.P.*

Murray states that, in his experience, belladonna is more beneficial than opium in relieving the pain of renal colic. In cases of renal colic, moreover, the author contends that if the drug is pushed sufficiently long and in large enough doses, the entire removal of the calculus—first from the pelvis of the kidney to the bladder, and then from the bladder *per urethram*—often follows. Some cases are quoted illustrating this

assertion. One patient had suffered for several months from repeated attacks of renal colic, during the last of which he was seen by the author, who gave belladonna until its physiological action on the eye and throat was evident, and then it was pushed further, so that in a few hours a lithic acid calculus was passed as large as an almond. In another case a youth suffered so severely from renal pain, that it was decided to operate, but, before consenting, the parents consulted Dr. Murray; he ordered 20 drops of tincture of belladonna every hour, and at the end of five hours a round rough calculus was passed. The special point to be remembered in these cases is to push the drug to its toxical stage, and keep up its action after the pain has been relieved, until a fair time has been allowed for the expulsion of the stone. You may begin with 40 minims of the tincture, and repeat it every two hours, increasing or diminishing the dose according to its effects on the pain.

REFERENCE.—"Provincial Medical Journal," 1890.

RETINA, DETACHED.

Synopsis.—(Vol. 1889, p. 422.) Massage of eye or puncture of anterior chamber for embolism of retinal artery.

(Vol. 1890, p. 450.) Injection of 2 to 4 drops **Tincture of Iodine** into the vitreous cavity, followed by **Atropine** and **Cold Compresses.** To procure absorption of ensuing vitreous opacities, Scholer injected **Biniodide of Mercury**, 1% solution, and **Potassium Iodide**, 10%, into the muscles of the back, preceded by an injection of **Morphia.**

RETROFLEXION OF UTERUS. (See "Uterus, Diseases of.")

RHEUMATISM (Acute). *Frank J. Wethered, M.D.*

Dr. Haig read a paper before the Royal Medical and Chirurgical Society on salicine compared with salicylate of sodium, as to its effect on the excretion of uric acid and its value in acute rheumatism. He said that salicine was generally considered to be of less value than a salicylate in acute rheumatism, and then cited cases which corroborated this statement. Dr. Haig further remarked that all methods of treatment that were of any value in acute rheumatism caused a plus excretion of uric acid, and salicine and the salicylates were useful in this disease in exact proportion to their power of producing elimination of this substance. He asked if acute rheumatism were due to uric acid; he gave reasons for thinking that the joint symptoms were due to it, and he considered objections against this view. He pointed out the differences between gout and rheumatism, which he said were partly due to the difference in the metabolic processes of young and old. Sir A. Garrod said that there was an absence of uric acid from the blood in acute rheumatism, and he had suggested that inflammation

destroyed uric acid. The writer believed that the uric acid was all driven out of the blood by high acidity and precipitated in the joints, and that such precipitation and not destruction of uric acid explained Sir A. Garrod's observation with regard to the effect of inflammation and the fever of rheumatism.

Dr. Refat places himself on record as an ardent supporter of the great value of **Phenacetin** in the treatment of acute and gonorrhœal rheumatism. More than a year ago, Dr. Refat writes that he commenced to employ phenacetin in rheumatism, beginning with a total dose of 45 grains, taken in divided doses, at intervals of three hours during the day. In the majority of cases he found that this quantity was insufficient in acute rheumatism where more than one joint was affected, and it was ordinarily necessary to increase the dose about 15 grains each day until pain was relieved. He rarely, however, exceeded 90 grains in the twenty-four hours, or, at most, 120. After having found the quantity which was necessary to produce amelioration of the patient's condition, this amount was persisted in for three days, and then again gradually diminished until the patient was only taking 45 grains a day, and this was persisted in for a week. The average duration of treatment under this method the author claims to be about seventeen days for moderate cases and twenty-one days for those of greater intensity. Although the author only reports three cases of gonorrhœal rheumatism, yet the result seems so remarkable that further trials of this remedy are apparently warranted.

Rheumatism (Subacute and Chronic).

Dr. Hochhalt describes a case of chronic articular rheumatism, which seems to show that the use of **Pilocarpine** is capable, to a certain extent, of relieving the less intense form of connective-tissue contraction, and to a certain extent of restoring the use of an affected joint. Of course, where the joints are bound down by old contracted muscles, or where the bone itself has become affected, but little may be expected, though the very fact that in certain cases relief may follow the use of pilocarpine is to be regarded as an important addition to our therapeutic measures.

Mr. James D. Staple speaks very highly of the **Oil of Wintergreen** for the relief of chronic cases of rheumatism. The joint is wrapped in cotton-wool and lightly bandaged; the pain is usually relieved in from five to six hours after its application. Mr. Staple states that he has used it in over one hundred cases, and in only two did it fail to give relief. The writer has also used it with success, but it has one very great drawback, namely, its disagreeable and penetrating odour.

REFERENCES.—"Therap. Gaz.," July 15, 1890: "Lancet," Aug. 30, 1890.

Synopsis—(Vol. 1889, p. 425.) **Tartar Emetic**, pushed even to vomiting, in cases where pain has gone from joints, but high temperature persists. If temperature is but slightly reduced under **Salicylates, Hydrobromate of Quinine**, grs. iv 6tis. hor. **Tinct. Spigelia**, ℥j to iij, frequently when pain is very sharp and neuralgic. Pain in acute stage is much relieved by compress, saturated with the following lotion, ℞ Tinct. Verat. Alb., ʒij; Potass. Carb., ʒj, Aq. ad., ʒiv, M. Ft. Lot.; Salol and Betol probably act like Salicylic Acid. **Cold Bath** or **Cold Pack. Amylene Hydrate**, 3·5 grammes, as hypnotic (p. 13).

(Vol. 1890, p. 451.) **Salicylate of Soda**, 20 grs., every hour for three or four hours, and continued in diminishing doses for eight or ten days, and then followed by **Iron, Salicylic Acid, Salicin**, and **Salol** may be tried if the soda salt is not well borne; **Antipyrin** is better in young children. In convalesence, Garrod's **Alkaline Mixture** followed by **Iron**; blistering or painting with **Iodine** if any joint remain stiff or swollen; **Cascara Sagrada** alone or combined with **Soda Salicylate. Electricity** for subacute changes in and around joints due to rheumatism.

RHEUMATISM AND GOUT (Chronic forms of). *Percy Wilde, M.D.*

In a work recently published on the "Rheumatic Diseases so-called," by Mr. Hugh Lane and Mr. Charles T. Griffiths, the definition of the terms chronic rheumatism, rheumatoid arthritis, rheumatic arthritis, and what is more popularly known as rheumatic gout, is considered. Their views are based upon the careful analysis of upwards of three thousand cases admitted to the Bath Mineral Water Hospital, and their observations are almost purely clinical. The classification proposed is as follows: (1,) Chronic rheumatism; (2,) Rheumatic arthritis; (3,) Rheumatoid arthritis; (4,) Chronic gout.

The result of their investigations has been to convince them that the difference between rheumatism and rheumatoid arthritis is of a greater and more extensive character than the text-books would lead one to believe. They restrict the term "chronic rheumatism" to those cases "in which the joints are painful but not swollen, or in which there is a neuralgia, or even arthralgia associated with neuralgia or apart from it, or in which the various fasciæ are affected, or in which there is a general neuralgic condition supervening on an attack of acute rheumatism." Comparing a chronic rheumatic patient with one who has rheumatoid arthritis, the pallor of the face of the latter is noticeable, and patches of a yellowish tinge are frequently found on the face and neck. The rheumatic patient will show little or no swelling of the joints, while in rheumatoid arthritis there is both swelling of the joints and muscular atrophy.

The history of the patient with rheumatism is frequently good, or perhaps at the most a rheumatic one, while the rheumatoid arthritic

patient in most cases gives or shows a strumous taint. To this strumous taint they attach considerable importance. The distinction drawn between rheumatoid arthritis, and rheumatic arthritis, is tabulated as follows :—

Rheumatoid Arthritis.	Rheumatic Arthritis.
(1,) Nervous disease due to debilitating causes.	(1,) Following rheumatism always.
(2,) Its last stage is osteo-arthritis.	(2,) Has no connection with osteo-arthritis.
(3,) Symptoms constitutional as well as local.	(3,) More confined to the joints.
(4,) Joints most used are the first affected, smaller joints first, running centripetally. Tempero-maxillary joints often affected. Symmetry of joints affected more noticeable.	(4,) Large joints often first affected, running centrifugally, and chiefly joints affected that were attacked in previous acute rheumatism. Tempero-maxillary joints never affected. Not so often symmetrical.
(5,) Swelling typical, more or less fusiform, and with appearance of effusion.	(5,) Swelling as if solid enlargement of normal joint.
(6,) Deformity varying.	(6,) Greater tendency to fixation of joints, inflexed position. Deformity in fingers is fixation in position of extreme flexion.
(7,) Anæmia an early and constant symptom.	(7,) Anæmia, if present, a later symptom, and never so intense.
(8,) Many neurotic symptoms, especially early in the disease ; sweating. headache, tingling, numbness, pigmentation.	(8,) Wanting, no headache, etc.
(9,) Very rarely have subacute attacks.	(9,) Greater tendency to subacute attacks.
(10,) Heart normal, but rapid in action.	(10,) Heart often diseased.
(11,) Hard, rapid pulse.	(11,) Pulse varies according to state of heart.
(12,) Reflexes normal or subnormal.	(12,) Reflexes increased, especially later in the disease.
(13,) Muscular atrophy concurrent with and often previous to joint affection, and small muscles chiefly.	(13,) Muscular atrophy subsequent to joint being affected, often large muscles first.
(14,) Any age.	(14.) Adults and mostly over middle age.

They do not deny that these distinctions are sometimes ill defined, especially where a case of rheumatism occurs during or previous to the condition of rheumatoid arthritis; the leading features of both disorders may be displayed in the same individual.

They speak of osteo-arthritis not as a synonym for rheumatoid arthritis, but as an advanced condition of the latter when bony implication has been distinct enough to merit the use of the word "osteo."

Synopsis. (Vol. 1889, p. 427.)—**Massage**; application of **Cold Water** or **Alkaline Compresses**; **Salicylate of Soda, Guaiacum, Lithia, Bryonia, Rhus,** to control inflammatory conditions. In cases of low vitality, with deposit of urate of soda, **Iodide of Arsenic, Phosphorus, Saccharated Carbonate of Iron,** as tonics; the continued current when there is decided arthritis; interrupted current when muscular weakness persists after subsidence of inflammation; also Ling's method. When liver is sluggish and engorged **Podophyllin** and **Belladonna,** āā gr. ¼, in pill, continued for from one to three weeks. In plethoric cases, **Carlsbad Salts,** followed by **Iron,** in free dilution, and **Tinct. Hamamelis,** ℥x, is often useful. Vigorous exercise; Turkish, Russian, and Lamp Baths, followed by spray gradually reduced to cold. **Cascara Sagrada,** gtt. xvj t.d., in chronic rheumatism (p. 31).

RHINITIS.

Greville MacDonald, M.D.

Chronic Rhinitis.—Little has been added to our resources in the diagnosis and treatment of this affection during the past twelve months. There is a steadily growing conviction among those most competent to deal with the subject, that reflex symptoms, attributed in certain quarters to inflammatory conditions of the nasal mucosa, have been the outcome of theoretical considerations rather than of clinical observation, a view apparently endorsed at the recent meeting of the International Medical Congress, at Berlin. Chronic rhinitis undoubtedly may give rise to a train of reflex actions, but these are none other than such as may be termed physiological, in distinction to the hypothetical pathological reflexes; that is to say, we may find any degree of sneezing, lacrymation, cough, and deglutition produced by an irritation of various regions of the nasal cavity, whether excited by dust, the irritation of a probe, or a swollen membrane. Undoubtedly, cases of asthma and epilepsy are occasionally encountered, in which the cure of the abnormal condition of the nose has resulted in improvement or even cure of the diseases; but it does not follow as a necessity that the symptoms were the result of reflex action originating in the nose, seeing that in all the recorded cases the main nasal symptom has been nasal obstruction. But the subject is too large a one to discuss in this place. In cases of chronic rhinitis in which respiration is conducted through the mouth, Goodwillie has designed a series of soft-rubber tubes for intubation. The form of these ensures self-retention, while they are invisible. They appear to be deserving of experiment, though they will not supersede surgical treatment in cases of true hypertrophy of the inferior turbinated. (Vide "Nasal Polypus.") Seiler, of Philadelphia, has recently detailed elaborate minutiæ for the treatment of an inflamed mucosa. After washing the nose with alkalies, he recommends the application of solution of **Iodine** in glycerine. He further has remarked on a point well-known to all rhinologists that the nose is strangely intolerant of astringents, while he deprecates the use of powders.

Rhinitis, Atrophic; Ozæna. — Moure, of Bordeaux, has given elaborate details of a course of treatment calculated to cure this rebellious affection. He recommends the free ablution of the nose with warm **Alkaline Douches**. He then applies a **Carbolic Lotion**. After the disappearance of the odour, he uses **Chloral, Resorcin, Salicylic Acid** or **Creolin**. As a matter of fact treatment is invariably successful, so long as the washings are not entrusted either to the patient or his friends, but is conducted by the practitioner himself, who must be competent to examine the nose scientifically, and must not be content until every portion of inspissated secretion has been removed. Given these requirements, and any deodorant wash, such as **Condy** or **Sanitas**, is sufficient for the cure. (Vide "Ozæna," "Med. Ann.," 1890.)

Rhinitis, Croupous.—This rare affection has recently come into greater prominence, more probably owing to the fact that a larger number of practitioners have become competent to examine the nose, rather than that the disease has become more common. It is in all probability strictly analogous to croupous bronchitis in its pathology, the affection in each case presenting as its characteristic feature a fibrinous exudation from the inflamed surface, forming a false membrane indistinguishable microscopically from the diphtheritic production. Clinically the membrane differs in its objective appearance from the latter in that it is usually not adherent, and may be removed without producing any hæmorrhage or abrasion of the surface. Moreover, the mucous membrane, so far as the writer's observation of seven cases instructs him, may be, though greatly swollen, rather paler than the colour of health; it may have in fact a somewhat œdematous appearance. This croupous inflammation of the nasal mucosa not uncommonly results artificially subsequent to electric or other cauterization of different regions in the nose, sometimes extending over wide surfaces, the limits being at considerable distance from the seat of application. The fact seems to indicate that the membranous production is the result of unusually intense inflammatory action. In the idiopathic croupous rhinitis, the extent of the patch may vary from the size of a small pea or even smaller to such a size that the whole of the nasal and naso-pharyngeal mucous membrane is covered with a thick, gelatinous, but firm membrane, which may be withdrawn from the nose with forceps, and without the production of any hæmorrhage. On the posterior wall of the pharynx may be seen round or lenticular isolated patches lying on an unnaturally pale or inflamed base. These, though more adherent than those in the nasal fossæ, can be peeled off with a brush or pledget of cotton wool, leaving a surface somewhat heightened in colour; but occasionally slight

hæmorrhage may occur. The subjective symptoms are generally those of an ordinary severe rhinitis, the temperature being raised to 100° or 101°. There is more or less occlusion of the nose with a profuse flow of watery mucus, pieces of membrane being occasionally extruded on blowing the nose. In some cases, especially perhaps where the production of membrane is not great, there is severe paroxysmal sneezing, which is sometimes allayed on the removal of a small portion of false membrane. Patients who have once had an attack appear in some cases predisposed to another, while in other cases there is a certain chronicity in the course of the symptoms. In one of the writer's cases there was invariably a wide patch of erythema extending across the bridge of the nose whenever the false membranes made their appearance. Schüler has noticed the association of the affection with erysipelas (Jahrbüch. für Kinderh. 1871). After removal of any portion of membrane there is a strong disposition to its regeneration. So far as treatment is concerned, there is little to suggest beyond such remedies as are likely to be of service in any ordinary case of acute rhinitis. **Hot Fomentations** to the nose and eyes have appeared to be of special service, while **Irrigations** with weak solutions of **Borax** have a soothing effect. But even without treatment the attacks seldom exceed in duration those of ordinary rhinitis. The literature of the subject is not extensive, many of the cases recorded as pseudo-membranous rhinitis being obviously instances of diphtheria of the nose. The best account has been given by Potter, of Buffalo, who states that 2 per cent. of all cases of rhinitis are of the membranous variety. But in certain respects his account differs from that given above, so far in fact as he asserts that the membrane cannot be removed without leaving a bleeding surface. Whether this be so or no in any case probably depends upon the intensity of the inflammatory action. Gluck has also recorded some cases, and Chapin has contributed to the literature of the subject.

REFERENCES.—"Med. Ann.," 1890; "New York Med. Journ.," May, 1890; "Journ. of Laryng.," Aug., 1890; MacDonald, "Diseases of the Nose," 1890; "La Tribune Medicale," 1890; "Jour. of Laryng.," March, 1889; "Med. Record," April, 7, 1889; "New York Med. Jour.," 1890.

Synopsis.—(Vol. 1890, p. 454.) A simple detergent wash, *e.g.*, 3 or 4 grains each of **Soda Bicarbonate** and **Borax** with a few minims of **Glycerine** to the ounce of water should be sniffed up the nose three or four times a day, in recent cases of tumefaction of the vascular tissues of the nose. If this fails, use linear **Cauterizations** with the electro-cautery, or a limited application of **Chromic** or **Monochloracetic Acids**.

RHINO-SCLEROMA.

Synopsis.—(Vol. 1889, p. 432.) A 2% solution of **Salicylate of Soda** has been injected into the part, and **Salicylic Acid**, grs. x, t.d.s., with some advantage.

RICKETS. (See "Rachitis.")

SCABIES. *W. Allan Jamieson, M.D.*

Sherwell said that **Sulphur** was the drug he advocated, but the mode of its employment was what he called attention to. Dry sulphur was used, the patient dusting the body as well as the bed clothes with it. Thus eczema and dermatitis were avoided. A mild oil, as that of **Sweet Almonds**, may be applied to the body before the dusting process. This method is especially good where all the family is affected. Eight cases have been thus treated during the past thirty days, with good results.

REFERENCE.—"New York Med. Jour.," Oct. 19, 1889.

Synopsis.—(Vol. 1889, p. 436.) R Styracis, ʒij, Bals. Peruviani, ʒss, Ung. Simp. ad. ʒj, M.; or R β Naphthol, ʒj, Ung. Simp. ad. ʒj to ij, solve; to be rubbed in for four successive nights. R Adipis, c parts; Sapo Viridis, 1 parts; Naphthalin, xv parts; Cret. Alb. Pulv., x parts, M. R Sulph. Sublimat. ʒj, Bals. Peruviani ʒss, Adipis ad ʒj, M. Ft. Ung.; Ung. Sulphuris, ʒj to the ʒj and Bals. Peruviani added. **Sulphur Bath**; **Potass. Sulphid**, ʒiv, Aq. (100° Fh.) C. xxx; skin is soaked for a quarter of an hour, then well scrubbed and soaked again for another quarter of an hour. Two baths are required.

SCARLATINA. *Frank J. Wethered, M.D.*

At the Epidemological Society, Mr. J. B. Curgenven, in introducing the subject of the treatment of scarlatina with **Oil of Eucalyptus**, which he had practised for the last twelve months and which he believed to be equally applicable to other infectious diseases, claimed for it that it was capable of superseding all other curative and preventive measures, and of rendering unnecessary all attempts at isolation of the sick, disinfection, beyond what it effected itself, of clothing, bedding, furniture, and rooms; and, except so far as better nursing accommodation, etc, were concerned, the costly establishment of special hospitals for infectious diseases. He gave the oil internally in frequent doses of a few drops shaken up in water; he saturated the clothing, sheets, pillows, etc., and sponged the entire surface of the body with it twice a day, besides sprinkling the floor, furniture, and walls till the air of the apartment was impregnated with the not unpleasant odour. The results he had invariably obtained were the immediate arrest of the eruption, which did not extend further, the speedy relief of angina and subsidence of enlarged glands, rapid defervescence of the fever, the temperature falling from 104° or 105° to 100° or even the normal, within a few hours, and the entire absence

of albuminuria, due to the elimination of such oils by the kidneys ; in short, the immediate arrest and cure of the disease. Further, it was, he maintained, no less effective in aborting the disease if the treatment were commenced when the symptoms of invasion had appeared, but the eruption, etc., had not been manifested ; and lastly, in protecting the most susceptible persons against infection, even though they remained exposed to it, adducing the case, amongst others, of five young children, who could not be supposed to be all of them insusceptible, and none of whom had had the fever before, in a small room where a sixth lay ill, the mother refusing to part with her sick child, and being unable to send the others away or even to remove them from what was her only apartment. He believed his cases to be numerous enough to exclude fallacies of the natural early subsidence of the fever, great resisting power or insusceptibility on the part of other children, and, in fact, all elements of chance.

Von Ziemssen strongly recommends cold and tepid **Baths**, and cold affusions in a similar manner as in the treatment of typhoid fever. If adynamic symptoms are marked, tepid baths and stimulants (brandy, etc.) should be resorted to, but not cold douches. Should membranous laryngitis occur, this observer recommends that the membrane should be removed as far as possible by means of forceps and lint, and then the tonsils treated with concentrated **Carbolic Acid** (1 in 2 to 1 in 10). In very serious cases resource must be had to injections of the acid into the parenchyma of the tonsils. If nephritic complications set in, Ziemssen again advises warm baths, followed by wrapping the body in blankets. The temperature of the bath must be maintained by continual additions of warm water. The duration of each bath should be about half-an-hour, and then a rest of two hours allowed before another is given.

REFERENCE.—"Jammbeng Klinisches Vortrage," Nov. 14, 1889.

Synopsis.—(Vol. 1890, p. 459.) **Mercuric Iodide.** ℞ Liq. Hyd. Perchlor. ʒj, Potass. Iodid. ʒss, Syr. Simp. ad. ʒviij, M. ; ʒss every one, two, or three hours. Sponge skin with **Corrosive Sublimate Solution**, 1 in 4000, as soon as the eruption appears, and wash the hair with the same lotion, and also a solution of **Borax**, 1 in 250 ; disinfect urine, fæces, and expectoration, as well as discharge from nose and ears, if present, by **Corrosive Sublimate Solution**, 1 in 1000. When patient is allowed to get up, sponge skin with **Corrosive Sublimate Solution**, wiping it dry and then applying ℞ Sodii Biboratis, Zinci Oxidi āā ʒiv, Ol. Gaultheriæ ʒss, Vaseline ʒiv. M. ; Ft. ung. Disinfect room with **Sulphur** and boil bedding, clothes, etc., in sublimate solution. **Oxygenated Water** has proved beneficial to quench thirst ; **Salicylic Acid** has been used in grave cases in a mixture of one part **Salicylic Acid** to 75 parts of **Water**, and 30 parts **Syrup of Orange Peel**, a teaspoonful being given every hour by day, and every two hours by night.

SCIATICA. *Graeme M. Hammond, M.D., New York.*

Dr. Solis Cohen reports a case of sciatica cured by injections of **Osmic Acid**, after a number of remedies had been unsuccessfully tried; 10 minims of a 1 per cent. solution were injected into the thigh, near the point of emergence of the sciatic nerve, and 15 minims were injected on each of the two succeeding days. During the next two weeks tri-weekly injections of 20 minims each were made. The patient could then walk without crutches; 20 minims were again injected higher up in the buttock, and the patient was discharged. About a month later it was found necessary to give one more injection of 30 minims.

REFERENCE.—"Philad. Neurol. Society Report," vol. xiv., No. 3, 1889.

Synopsis.—(Vol. 1889, p. 436.) Enveloping the limb in **Flowers of Sulphur**. In chronic cases, **Croton Oil Pills** and a course of laxatives may cure; **Theine**, gr. ss to iij, hypodermically. ℞ Theine, Sodium Benzoate āā ʒj, Sodium Chloride, grs. viij, Distilled Water, ʒj, M. For hypodermic use. ℞ Tinct. of Aconite Root, Colchicum Seeds, Belladonna, and Actæa Racemosa, equal parts, vi drops being taken every six hours, until pain is relieved. **Methyl Spray** (p. 54); **Saffrol**, ♏xx, and increased (p. 64).

(Vol. 1890, p. 461.) **Osmic Acid**, 1% solution injected over the nerve, using 10 minims at first, and increased to 30 minims each time, and the injection is used daily at first, and later on three times a week. ℞ Osmic Acid 1 part, Glycerine 40 parts, Distilled Water 60 parts; Sig. The injection. In one case large doses of **Antifebrin**, grs. 50 the first day and grs. 40 the second, cured. **Sulphuric Ether** hypodermically injected, using 20 or 30 minims several times daily has proved curative; **Tincture of Gnaphalium**.

SCLERATITIS.

Synopsis.—(Vol. 1890, p. 462.) **Hot Fomentations**, and a 1% **Ergotine Solution**, of which 8 drops are dropped in daily; internally every morning a powder of **Rhubarb, Magnesia**, and **Carbonate of Soda**, and before each meal **Benzoate of Lithia** or **Soda**. **Cauterization** of sclerotic with galvano-cautery when the disease is stationary, repeating this every few days and blistering behind the ears at the same time; when there is a rheumatic history, give **Salicylate of Soda** and apply **Leeches** to the outer canthus.

SCLERODERMA.

Synopsis.—(Vol. 1889, p. 437.) Tonics and avoidance of cold; Turkish Baths, Shampooing, Massage, Galvanism, **Lanolin** inunction, and in the localized variety, **Compound Salicylic Glycerine Jelly** is useful.

(Vol. 1890, p. 462.) **Daily Baths** at 85° Fh. for three hours; **Daily Massage** of all the indurated parts; inunction with **Oil** every evening; envelopment in **Flannel** at night; administration of **Iron** preparations; use of albuminous food and free exposure to the open air by day.

SCROFULA.

Synopsis.—(Vol. 1889, p. 36.) **Delphinium Consolida** infusion, internally and externally, for scrofulous ulcers.

SCROFULODERMA.

Synopsis.—(Vol. 1889, p. 438.) Ol. Morrh., Iron, Phosphorus, or Iodine. ℞ Phosphori, Ac. Arseniosi, āā gr. $\frac{1}{10}$, Ft. Pil. Dermal Curette, followed by Mercurial Ointments or Lotions; Iodide of Starch Paste or Iodoform. Chaulmoogra Oil in Emulsion, ♏x to xxx, and externally as ointment, j part to iij; 5% solution of Iodoform in Oleic Acid, brushed on two or three times a day, often prevents suppuration.

SCURVY.

Synopsis.—(Vol. 1889.) Geranium Maculatum, gr. x to xl (p. 42); Pulque, ℥j to jss. (p. 63).

SEBORRHŒA OLEOSA.

Synopsis.—(Vol. 1889, p. 438.) Abstinence from alcohol. ℞ Aloin, grs. iij; Zinci Ox., grs. v; Capsici, grs. x; Ext. Gentianæ, gr. l, M. Ft. Pil. in numero xxv, Sig. j q.d., and the following lotion. ℞ Thymol, grs. ij, Chloral Hydratis, grs. xx, Ac. Borici, ℥j, Hamamelis Dest, ℥j, M. Ft. Lotio. In obstinate cases of seborrhœa of the scalp, ℞ Ung. Hyd. Nit, ℥j to iv, Ol. Cadini, ℥j, Ol. Olivæ, ℥ij, Lanolin, ℥iv, M. To be rubbed in every night when the scalp has lost its natural oiliness. ℞ Ac. Tannici ℥j, Glycerini pur. q.s., Vaselini, ℥j, Ung, Aq. Rosæ, ℥j, M. When hyperæmia exists soothing applications, *e.g.*, ℞ Liq. Plumb. Subacet., ℥ss, Vaselini Alb., ℥j, M., or Naphthol Ointment, grs. xx to the ℥j; or Sulphur Ointment, ℥ss to j to the ℥j; or a mild Resorcin Ointment.

SEA-SICKNESS. *Graeme M. Hammond, M.D., New York.*

Mr. W. M. Russell states that after several years' experience as a ship surgeon, during which time he was often at his wit's end endeavouring to relieve the most distressing vomiting of sea-sickness, especially in the cases of delicate or strumous women, after using the ordinary remedies with very little success, he ascertained that **Eucalyptus Rostrata**, when properly administered, almost invariably gave relief. The drug is given in the form of lozenges (trochisci eucalypti gummi, gr. i, in each). The patient can thus easily carry about a few in the pocket and take one when he feels the sickness coming on. Three or four a day have usually been found to be sufficient.

In a small handbook on this subject, recently published by Dr. Thomas Dutton, who can speak with considerable practical experience of the treatment of this troublesome disorder, great importance is attached to the use of **Bromide of Ammonium**, which the author regards as a true specific. He is particular, however, to insist upon previous attention to the condition of the liver and digestive organs. Among other remedies he has used with advantage, the following are mentioned: **Chloroform** (♏ j.) in soda water, **Nepenthe, Nitrite of Amyl, Cocaine, Creasote, Oxalate of Cerium, Caffeine,** and **Antipyrin.**

SERO-PNEUMO-THORAX.

Synopsis.—(Vol. 1890, p. 464.) Introduction of Sterilized Air to replace the fluid drawn off.

SMALL-POX. *Henry Dwight Chapin, M.D., New York.*

Dr. Lewentaner advises the treatment of small-pox by an antiseptic method. This method consisted in the application of an ointment composed of **Salicylic Acid**, 3 parts ; **Starch**, 30 parts ; and **Glycerine**, 70 parts. The ointment was applied to the face by means of a mask, and also to the other parts on which the eruption was marked. Notwithstanding that the eruption was confluent in many places, large bullæ filled with pus being present, the lesions all dried up without rupturing, and left no cicatrices to mark their site. In addition to this external application, a mixture of quinine in cherry laurel water, oil of sweet almonds, and syrup of orange flowers, was employed. A small quantity of this mixture was dropped on the tongue and back of the pharynx by means of an ordinary medicine-dropper, three or four times an hour.

The advantages of this method of treatment are summed up by the author as follows : (1,) All the children treated in this way recovered, although the ordinary mortality of the disease is 40 per cent. ; (2,) The duration of the disease was decidedly shortened, the period elapsing from the commencement of the eruption to the falling off of the crust being twelve or thirteen days ; (3,) The disease ran its entire course almost without fever ; (4,) The danger to those around the patient is greatly lessened. In the author's cases there were other children exposed, but notwithstanding that they were not vaccinated, they did not contract the disease ; (5,) The simplicity of the method, as compared with the treatment by baths and cold applications, has much to recommend it ; (6,) Æsthetically, also, the antiseptic method of treatment offers great advantages, since it prevents absolutely all pitting.

REFERENCE.—" Bulletin Gén. de Thérap.," No. 32, 1889.

Synopsis.—(Vol. 1889, p. 439.) **Acetanilide** ij grammes daily in solution and a tablespoonful given every hour from 10 a.m. to 9 p.m. **Calomel** in powder either alone or with starch (20 or 30%), dusted on face to prevent pitting.

SNOW-BLINDNESS.

Synopsis.—(Vol. 1890, p. 465.) **Cold Compresses** and **Atropine.**

SPINE (Angular Curvature of).

Synopsis.—(Vol. 1889). Solanin, gr. $\frac{1}{2\frac{1}{2}}$ to $\frac{1}{1\frac{1}{2}}$ to remove irritability of spine (p. 67).

SPINE (Typhoid). (See " Orthopædics.")

SPLEEN (Chronic Hypertrophy of). *Frank J. Wethered, M.D.*

In the " Medical Annual" for last year, Mr. Mayo Robson in treating of the surgery of the spleen, remarked, " Splenectomy for leucocy-

thæmia is unjustifiable, all the cases operated on having died." Further cases have corroborated this.

Dr. Mosler, in the "Wiener Med. Woch.," also argues against extirpation of the spleen as a method of treatment in leukæmia. The chief danger is the tendency to hæmorrhage in such patients. The difficulty of deciding whether in any given case the condition was one of simple hyperplasia or a serious disease of the blood, also negatived the idea of operation. In such cases Dr. Mosler first tries parenchymatous injections of a 2 per cent. solution of **Carbolic Acid**, and then a solution of 1 part of **Fowler's Solution** and 10 parts of distilled water. An **Ice-bag** is applied to the spleen before injection ; owing to the contraction of the splenic muscles, the amount of blood contained in the organ is diminished. Ice-bags are also applied to lessen pain and prevent inflammation. This method, as well as injections of extract of **Ergot** and **Sclerotinic Acid**, has frequently been employed by Mosler and others. In one case Dr. Mosler had the opportunity of examining the anatomical conditions of the spleen after injections of Fowler's solution. The capsule was found wrinkled and thickened, presenting patches over the thickened parts. The connection of those conditions of the capsule with the injections was beyond any doubt. Dr. Mosler does not ascribe the diminution of the organ to the mechanical irritation produced by the injections, but rather to the influence due to the direct application to the spleen. He recommends great care in the use of the parenchymatous injections. Encouraged by these favourable results, Dr. Mosler tried these methods of treatment in hypertrophy of leukæmia, and here also obtained considerable decrease of the organ. The subjective disturbances due to the hypertrophied spleen were thus lessened, and the moral impression made on the patient by the active treatment had also to be taken into account.

SPLEEN (Surgery of). *A. W. Mayo Robson, F.R.C.S.*

In the "Philadel. Med. Jour." for Sept., 1890, Dr. Howard Fussell gives a table of one hundred and five cases of splenectomy for various conditions, the proportion of recoveries being 57 per cent. He also reports a case on which he had operated, viz., a woman aged fifty, who, after a full meal had been suddenly seized with severe abdominal pain, vomiting, and purging. A tumour was discovered in the left groin, which occupied the greater part of the pelvis. Laparotomy was performed, when the tumour was found to be a displaced spleen, the pedicle of which was twisted. This had caused rupture of the organ in the hilum. Unfortunately the patient died the next day.

Injuries.—In the "Arch. f. Klin. Chr.," vol. xxxiv., Dr. Edler, of Metz,

in writing on the treatment of wounds of the abdominal viscera, says that injuries of the spleen are fatal in 70·6 per cent. of the cases. The spleen should be removed when, after open wounds, large vessels continue to bleed in spite of the tampon, when, after subcutaneous lesions, dangerous bleeding occurs, when progressive pathological change is going on in a prolapsed spleen, and when suppuration of the organ occurs.

SPRUE. *Frank J. Wethered, M.D.*

Psilosis or Sprue is a tropical disease occurring chiefly in China; although rarely in itself fatal, it ruins the life and prospects of hundreds. The disease is characterized by progressive wasting, looseness of the bowels, a peculiar condition of the tongue and buccal mucous membrane, and in the later stages great pain and difficulty on swallowing. The motions may be considered characteristic; they are either of a pale straw-yellowish colour, frothy and quite unformed, or they consist of a greyish-white pultaceous mass, often in a state of apparent fermentation, the motion being found covered with froth.

The disease has been chiefly studied by Dr. Thin in this country, and Dr. Begg in China. Dr. Thin thus describes the condition of the tongue: A remarkable peculiarity of the affections of the tongue and mouth is their fugitive character. The tongue may become the seat of an eruption which is almost herpetic at the outset, soon leaving the surface bare; or the whole tongue or patches of it, may simply become gradually red and bare. The disease begins insidiously, is usually very chronic, and even after it is apparently cured the patient is very liable to a relapse.

Last year the writer had an opportunity of making an autopsy on a case of sprue, which had been under the care of Dr. Thin, and also of undertaking the first histological examination of the tissues. The body was greatly emaciated. Nothing abnormal was noticed in the condition of the thoracic organs, that bore on the disease. The liver, spleen, and kidneys were practically healthy. The tongue was clean. The walls of the œsophagus were a little thickened. Stomach appeared healthy. The intestines were brownish in colour, and gave a velvety feel to the hand. The walls of the duodenum were thin, and the whole of the interior lined with a thick layer of mucoid material. The walls were so thin as to be perfectly translucent. The jejunum and ileum showed similar appearances. The mucoid-like material was continued almost to the termination of the rectum. On microscopical examination the tongue was found devoid of epithelium in many places, the destruction gradually passing into healthy tissue. In the œsophagus marked and extensive changes were noticed. The

epithelium was entirely destroyed, and the mucosa densely infiltrated with small round cells. No abnormal changes were to be seen in the stomach and duodenum. Towards the end of the jejunum slight inflammatory action showed itself, but it was in the ileum that the most marked changes presented themselves. The mucosa was almost entirely destroyed, being replaced by a structureless substance enclosing leucocytes, and here and there the remains of a follicle. The submucosa appeared much thickened, and the fibrous tissue abundant and more than usually solid in consistence. The cæcum and rectum showed no changes.

As is usual with sections of intestine, numerous micro-organisms were found, but no distinctive groupings could be made out.

Dr. Thin has isolated several distinctive varieties of bacteria from the stools of patients suffering from sprue, but none of these have as yet been shown to be pathognomonic. Dr. Begg is most strongly of the opinion that the disease is due to a micro-organism.

As regards treatment, experience shows that nearly all foods can be digested, but not absorbed, and if anything but milk be taken the patient becomes worse, although microscopic examination of the stools shows very little undigested food matter, therefore Dr. Thin lays great stress on confining the patients to a strictly milk diet for a considerable time, gradually allowing solid food, but returning to the milk directly the stools become unformed.

Dr. Begg states that in most of his cases all the distressing symptoms of the disease yielded to a course of **Santonine**. The dose is the usual one of 5 grains for an adult, and is given in a teaspoonful of **Olive Oil**, well mixed, and administered the first thing in the morning, or if the patient suffers considerably from the effects of the drug, Dr. Begg prefers to give it at bedtime. He uses one dose each day for six doses, and uses the yellow crystals, having had unsatisfactory results from the white.

REFERENCE.—"Brit. Med. Jour." June 14, 1890.

STOMACH (Dilatation of).

Synopsis.—(Vol. 1890, p. 469.) **Electricity** applied internally; **Massage**; external **Faradization.**

STOMACH (Surgery of). *A. W. Mayo Robson, F.R.C.S.*

The question of the best method of treating cancer of the pylorus has been the subject of numerous papers during the past year. The general feeling of the profession seems to be, that if cancer of the pylorus can be discovered sufficiently early, that is, before the disease has involved the contiguous parts and before the glands have become affected, pylorectomy should be performed, the great disadvantage of

the operation being the length of time which it takes in completion, and hence its high mortality; but the operation may be considerably shortened by adopting the method which has been successfully carried out by Billroth and Bull, of removing the disease, tucking in and suturing the cut ends of the duodenum and stomach respectively, and then performing gastro-enterostomy by means of decalcified bone plates.

Fortunately where it is impossible to completely remove the disease, the operation of gastro-enterostomy—in which apposition is effected by means of Senn's plates—gives a very fair chance of relief with a minimum amount of risk. I have myself performed the operation in one case, and have been immediately concerned in two others, all of which recovered.

Mr. Jessett, in a letter to the "Lancet," also reports four other successful cases.

The older method of performing gastro-enterostomy by means of a double row of sutures, involved such a prolonged operation that it was likely to lead to a high mortality, and Bockwitz has collected twenty-four cases where the operation was done for cancerous stricture, with a mortality of 42 per cent.; but out of seven cases where it was resorted to in non-malignant stenosis, there was but one death; it must be borne in mind that these operations were all performed by the older method.

The question of opening the stomach and stretching the pylorus, is still on trial, and it is likely that it will be found that gastro-enterostomy is the safer operation to perform even in these cases; for Loreta himself encountered the re-contraction of the stricture three times, and had to resort to a second operation in two of the cases; moreover, the mortality of Loreta's operation is not inconsiderable, for out of twenty-five of these operations there were ten deaths, or a mortality of forty per cent.

An interesting case was reported by Dr. M'Ardle ("Med. Chron.," Oct., 1889) of pyloric obstruction due to adhesive peritonitis fixing the pylorus to the abdominal wall, the treatment of which by means of inflation with air, under a pressure of half-a-pound to a square inch resulted in the detachment of the adhesions and the cure of the patient.

In the "Brit. Med. Journ.," June 7, 1890, is the report of a case by Prof. Postempski, in a lad aged eighteen, on whom, after every kind of medical treatment had been tried to no purpose, he excised a round ulcer, by resection of the anterior wall of the stomach near the pylorus. Examination of the ulcer after removal showed that perforation was on

the point of taking place. The patient got up on the tenth day after operation ; there had been no return of the vomiting, and he was gaining weight.

Prof. Ewald recommends in the operation of gastrostomy that a very small opening should be made in the stomach with the cautery point, and a fine cannula inserted. The fistula afterwards enlarges sufficiently of itself. With regard to the gastric secretion, Ewald states that the secretion of hydrochloric acid is not a continuous act, and that there should be no free hydrochloric acid in the stomach, unless it be reflexly excited by the presence of food in the mouth. Ewald speaks of three stages of normal digestion, as revealed by the accompanying substances found in the stomach: (1,) Lactic acid ; (2,) Hydrochloric and lactic acid ; (3,) Hydrochloric acid alone. The third stage should occur after one hour's digestion. Before removing the contents of the stomach a sample breakfast is given, that is to say, a small definite quantity of white bread, eggs, etc., is given on an empty stomach, and after a fixed interval the contents are removed and examined. If after the contents are removed, they reveal the presence of an acid by reaction with phenolphthalein, it must be determined if this be a free acid or only an acid salt. This is most readily done by one of the aniline colours, which change if a free acid be present. Thus fuchsine becomes yellow, methyl violet, blue, etc. The best tests for free hydrochloric acid are tropæolin and Gunzburg's reagent phloroglucin-vanillin. In ulcer of the stomach a great excess of acid is usually present. Küssmaul pointed out that in carcinoma of the stomach the hydrochloric acid is deficient, and this appears also to be often the case in anæmia, Addison's disease, and most chronic affections. In most cases of carcinoma there follows, as a secondary degeneration, an atrophy of the mucous membrane, which lessens the secretion of hydrochloric acid.

In the "Arch. fur Klin. Chirurg.," 39, p. 785-844, are the results of resection of the stomach in Billroth's Klinik. They are classified as :—

	Cases.	Recoveries.
Typical Resection for Carcinoma (Sarcoma) ...	10	4
Atypical ,, ,, ,, ...	1	0
Circular ,, ,, Cicatrix	5	3
Partial ,, ,, ,, ...	3	1

In thirteen cases of carcinoma hydrochloric acid was found in six, and not detected in seven. In four cases of cicatricial stenosis, hydrochloric acid was observed in all, and in two cases in large amount.

Although gastrostomy for non-malignant obstruction is a fairly successful operation, when performed for cancer of the œsophagus, it is

one of extreme fatality. In a case of cancer of the œsophagus I performed the operation suggested by Mr. Greig Smith, and found it so valuable that I think it ought to be further known. My patient lived for eleven months in comparative comfort, during the whole of which time he never took a particle of food except by the artificial opening.

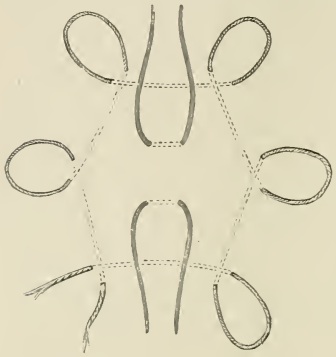

Fig. 46.

By this method of suture the peritoneal coat of the stomach is kept in apposition with the parietal peritoneum in a continuous circle for some distance from the point where the stomach is to be opened. The insertion of two loops of silver wire, as suggested by Mr. Bryant, serves to mark the spot at which the stomach is to be opened, and by means of these wires the stomach can be manipulated whilst the silk suture is being applied. With a round needle threaded with from twelve to fifteen inches of moderately thick silk, a continuous suture is passed in the anterior wall of the stomach, in a circle of about two inches in diameter, under the peritoneal coat, taking up a little of the muscular layer as well, the suture being made to emerge and leave a loop at every three quarters of an inch of the circle, thus leaving about six loops protruding from the serous surface of the stomach.

At corresponding situations on the skin about half-an-inch from the edge of the wound, a handled needle with a hooked eye, is pushed through all the layers of the abdominal walls, catches up the loops and brings them to the surface one after the other. As each loop is drawn up a piece of elastic tubing or a piece of catheter is slipped into it. The loops are then moderately tightened over the catheter by pulling at the ends of the silk. Finally the

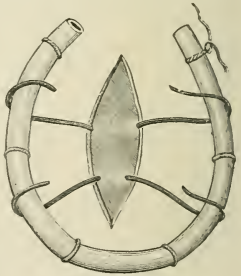

Fig. 47.

ends of the silver suture are hooked under the catheter, serving to keep the exposed parts well up in the gaping wound.

It will thus be seen that by this method of fixing the stomach accurate peritoneal apposition is obtained over a large space, and the stomach is not dragged out too far, thus lessening the risk of a dribbling fistula. Moreover, the method is rapidly and easily carried out.

REFERENCES.—"Brit. Med. Journ.," May 3, 1890 ; "Lancet," April 12, 1890 ; "New York Med. Record," Dec. 24, 1889 ; "Brit. Med. Journ.," Nov. 16, 1889 ; Ibid., May 10, 1890 ; "Lancet," July 12, 1890 ; "Med. Chron.," Feb., 1890 ; "Lancet," May 17, 1890; "Brit. Med. Journ.," June 7, 1890 ; "Deut. Med. Woch.," Nov. 7, 1889.

Synopsis.—(Vol. 1889, p. 442.) For dilatation of stomach, **Tannin** in xx centigramme doses if no constipation exists ; x centigramme doses if bowels are inactive. For the dilatation of rickets, **Laxative Salines, Ol. Morrh., Lavage** ; meals must be frequent and small, excluding tea, beer, and aerated waters, and substituting **Lemon Juice** for vegetables and using farinaceous foods and milk sparingly. Where acid is excessive and epigastric tenderness exists, **Nitrate of Silver in Coated Pills**, gr. ¼ half an hour before meals. Where acid is deficient, **Ac. Hydrochlor**, gtt. v, well diluted, may be given every half hour after a meal until four doses have been taken. In periodic gastrosuccorrhœa, **Narcotics** are recommended, *e.g.*, **Nepenthe**, in small doses; also **Nitrate of Silver**, grs. j to jss, and for the nervous symptoms, **Bromide of Sodium** in xx gr. doses.

(Vol. 1890, p. 470.) Administration of 5 grains of **A. Naphthol, Salicylate of Bismuth** and **Calcined Magnesia** for several days as a preliminary antiseptic measure.

STOMATITIS.

Synopsis.—(Vol. 1889, p. 359.) **Sod. Salicylate**, 20% sol. applied five or six times daily, especially after meals for confluent aphthous stomatitis.

SWEATING (COLLIQUATIVE).

Synopsis.—(Vol. 1889, p. 11.) **Agaricin**, gr. $\frac{1}{6}$, at bedtime and repeated twice during night.

SYCOSIS. *W. Allan Jamieson, M.D.*

Lassar recommends the following ointment as of much service in all pustular affections of the hairy parts of head and beard :—

℞ Hydrarg. Sulphureti Rubri	1·0	Adipis	75 0
Sulphuris Sublimati	24·0	Ol. Bergamottæ	gutt. aliquot.

Brooke notes that Lassar had obtained the formula by analyzing an ointment used as a wonder-salve by an old shepherd, and which proved to be a forgotten formula of Biett's of fifty years ago. Dr. Unna employs salves and salve-muslins of a similar composition, but not quite so strong, yet very effective in the treatment of pustular affections.

Brooke is of opinion that much of the want of success which attends the treatment of sycosis is due to confusion as to the cause and course

of the affections so designated. He believes that true sycosis as distinguished from tinea barbæ may be acquired by contagion, and therefore that the division into parasitic and non-parasitic sycosis is not a correct one. Sycosis so acquired affects almost exclusively those who frequent the lower-class barbers' shops, where no great amount of care is exercised as to the cleanliness of the utensils. The history of the cases is singularly uniform. The most typical are those in workmen who are shaved once a week, on Saturday night or Sunday morning. On Tuesday or Wednesday they notice a localized redness and slight scaliness and irritation, with the formation of pustules, a common point of origin being among the group of thick hairs immediately below the lower lip, which the barber is in the habit of "shaving up" pretty vigorously. Shaving, however, is not the only method of propagation, for the same disease occurs in the moustache, occasionally in the whiskers which have never been touched by the razor, and on the scalp and pubes, among the eyelashes, and in the axillæ, though with far less frequency. In the pus in sycosis Bockhart has found the staphylococcus pyogenes cereus et albus, and inoculation of the cocci produced pustules. An eczematous surface may thus become sycotic. The treatment Brooke recommends is as follows: Should there be much inflammation or eczema, the application of a lukewarm poultice of an antiseptic **Starch Paste** made from starch powder, 1 oz., **Boracic Acid** 30 grains, to be changed three times a day. This helps to soothe the inflammatory condition, to clean the skin from scabs, and to soften and empty the pustules. As soon as possible epilation and shaving must be begun. The ointment which he finds generally effectual is thus compounded:—

℞ Hydrargyri Oleatis	2½% ʒj	Acidi Salicylici	grs. 10
Amm. Sulphoichthyolici	ɱ 20	Olei Lavandulæ	gutt. 2

Misce. Fiat ung.

This should be kept applied on strips of linen. It is by no means always absolutely necessary to shave, but the stubbly condition of the hair produced by infrequent shaving seems the more irritating to the follicles, and most provocative of relapses; hence the full growth of the hair is the next best alternative to regular daily shaving.

Rosenthal, of Berlin, says that many of its supposed causes have no foundation in fact. Catarrhal conditions of the nose, whether in strumous subjects or not, are very often exciting causes of the disease. In many cases no plausible explanation for the appearance of the disease can be found. This gives occasion for a number of theories—such as the hair being too large for the follicle, an error in the process of hair-fall and regeneration, and the entrance of staphylococci into

the follicles—neither of which is considered as proved. In the treatment of the disease shaving and epilation are advised, while the use of the sharp spoon is advised against. After the daily shaving, and once or twice besides, the patient should rub into the skin an ointment of **Tannic Acid** 15 grains, **Sulphur** 30 grains, and **Vaseline** 5 drachms. At night he is to bind upon his face either a **Salicylic Acid** paste, or Hebra's or Wilson's ointment. Or, instead of using two preparations, the following may be used: **Tannic Acid** 75 grains, **Sulphur** 2½ drachms, **Oxide of Zinc and Starch** of each 1½ drachms, **Vaseline** 1½ oz.

REFERENCES.—"Jour. of Cutan. and Genito-Urin. Dis.," Oct., 1889; "Brit. Jour. of Derm.," April, 1890; Ibid., Dec., 1889.

Synopsis.—(Vol. 1889, p. 456.) Shaving and epilation, and then soothing applications, *e.g.*, **Oleate of Zinc** or **Ung. Iodoformi.** If there is much infiltration, bathe with hot water, rub with soft soap, and then use **Sulphur Ointment**; ℞ Sulph. Præcip., ʒj, Creasoti, ♏x, Vaselini, ℥j, M. To be gently but firmly rubbed in twice a day; or, ℞ Tragacanthæ, ℥ss, Glycerini, ℥ss, Boracis, ʒss, Aq. Dest., q.s. Ft. Pasta.

(Vol. 1890, p. 472.) In acute cases with much pustulation, epilate, or curette, and apply **Boric Acid Ointment**, or **Lassar's Paste** with **Salicylic Acid**; **Calcium Sulphide**, gr. $\frac{1}{10}$, in fresh tablet triturates every two hours internally; in subacute cases where disease is more patchy, epilate or curette, and use **Bronson's Ointment** (Hydrarg. Ammon. ℈j, Hydrarg. Chlor. Mitis ℈ij, Vaselini ℥j), or one of **Sulphur, Tar**, or other mild stimulant; or use soap frictions followed by protective ointments. In chronic cases, epilate or curette, or apply a solution of **Caustic Potash** carefully, and then use a soothing dressing; **Tar** in **Alcohol** has given good results in some chronic eczemas; **Soap Frictions** are also useful in these chronic cases; the affected area should be shaved to allow of the application of remedies; in severe cases a **Carbolic-Mercurial** or a **Resorcin Plaster** muslin should be constantly worn. Where treatment can only be carried on at night, apply a **Zinc Sulphur** muslin at night and in the morning; epilate diseased follicles, and touch them individually with a 5% **Resorcin Spirit**. For sycotic catarrh use nasal douches of **Ichthyol Solution**, 1% twice daily; over-fatty **Soap** should be used as prophylactic for washing and shaving, and fresh points of suppuration should be treated by epilation and cauterizing with a pointed rod dipped in **Corrosive Sublimate Paste**, or the 5% **Resorcin Spirit**; nightly inunction of a weak **Resorcin** or **Sublimate Vaseline**, when the beard is worn, or a corresponding paste (if the patient shaves) should be used.

SYMBLEPHARON.

The numerous operations devised for the treatment of this condition prove that one must select an appropriate operation for each case, and not attempt to cure all cases by the same method. When the lower cul-de-sac has been destroyed, Mr. Tweedy separates the lid from the globe to a point a little deeper than the normal sac, then passes some fine double sutures through the free margin of the detached conjunctiva and brings them out through the skin as near the lower orbital margin

as possible. The sutures are tied over a piece of rubber tube and left in four or five days. The symblepharon thus forms the inner surface of the lid. Recently the writer modified this plan in a case where the lid and globe were in direct contact by dissecting up two flaps of ocular conjunctiva, one on either side of the raw surface, produced by the separation of the lid and globe. These flaps, attached at their corneal margin, were brought down and united by a few sutures along their contiguous edges. The lower edge of the united flaps was next stitched into the bottom of the new cul-de-sac by sutures passed through the lid and tied over drainage tubing. There being only one raw surface epithelium soon formed over it, and the result was excellent.

SYPHILIS. *Jonathan Hutchinson, Junr., F.R.C.S.*

As is well known, a great number of mercurial compounds, including insoluble preparations, such as the oxides, have been advocated for hypodermic use. The question whether the obvious drawbacks of the method are more than counterbalanced by the claimed advantages of rapid and prolonged action or not, must be considered as still *sub judice*; and it is doubtful whether in England the hypodermic method has of late won many adherents. Dr. R. W. Taylor, of New York, an authority on venereal diseases, claims for it "a place in our armamentarium, though a subordinate one." Thus in cases of recent ocular syphilis, where it is most desirable to obtain a rapid effect, he prefers inunction to injection, but in other instances in which mercury has been given by the mouth, and has caused gastric trouble, he has known its hypodermic use to be followed by satisfactory results. He advocates the employment of aqueous solutions of the bichloride ($\frac{1}{12}$ to $\frac{1}{8}$ of a grain dissolved in 10 drops of water), and in cases of severe localized symptoms states that the drug should be injected beneath the skin of the affected region. When used in the treatment of gummatous lesions of bone or fibrous tissues iodide of potassium should be given by the mouth, in addition to the hypodermic injections of mercury. Dr. Taylor makes one statement which seems to us most incorrect, that bichloride of mercury, if given by the mouth for syphilitic affections, is an uncertain and dangerous remedy, whilst it is especially trustworthy when administered by hypodermic injection. In a discussion on the value of the latter, lately held at New York, the great majority of the speakers were wholly opposed to it.

Dr. Dymnicki has treated a large number of cases of syphilis by hypodermic injections of mercury, at the same time giving considerable doses of quinine by the mouth (15 to 20 grains daily). He came to the conclusion that the quinine was useful where the patient's

strength was much reduced, or in those rare instances in which there is "syphilitic fever."

Prof. Leloir and M. Tavernier, after a careful and thorough trial of the hypodermic method, conclude that its only advantage over others lies in its rapidity of action, and would reserve it for certain cases of syphilitic skin diseases. They believe that it has no influence in preventing relapses, and that in many cases it fails where inunction succeeds.

Should Anti-Syphilitic Treatment be begun in the Primary Stage? —On this question authorities are still divided. All admit that if mercury be given continuously from the time that well-marked induration of the chancre and glands is noticed, the secondaries will be at least retarded in their appearance. That it is very difficult to wholly prevent any secondary symptoms is also admitted, and some hold that the latter will be equally or even more severe than if the drug were wholly omitted. Dr. Taylor, of New York, is of opinion that mercury should not be given until the secondary stage has been reached, and he does not believe that by this line of treatment the really dangerous symptoms of syphilis (those of the tertiary stage) are favoured in any way. It may be remarked that if the use of mercury be hastily adopted it may be extremely difficult for the surgeon afterwards to feel certain that the diagnosis of syphilis was correct, and it is both needless and wrong to inflict a long course of mercury on a non-syphilitic patient. Hence, unless the chancre be absolutely typical (and about many it is impossible to make a mistake) it is unadvisable to begin mercury until the earliest secondary has developed. Such is, at any rate, a fair deduction from our present state of knowledge on the subject.

How Late can the Taint of Syphilis be Transmitted to the Offspring? —In an interesting discussion on this question, at the St. Louis Hospital, in Paris, evidence was brought forward that it is occasionally possible to transmit syphilis as late as ten to twenty years after infection.. MM. Fournier and Barthélemy quoted two cases in point. In one, a woman (twenty years after her infection) gave birth to a child who developed interstitial keratitis and an osseous node, both lesions yielding rapidly to iodide of potassium. It may be admitted that such instances are excessively uncommon, but they must be borne in mind when giving our syphilitic patients permission to marry. As a general rule this may safely be allowed to patients who have been properly treated, and in whom no symptoms have appeared for the space of two years.

Syphilitic Inflammation of Muscles.—The liability of certain muscles

to be affected during tertiary syphilis is well known. The calf muscles and the biceps of the leg are perhaps the most often involved, and Neumann has lately drawn attention to the sphincter ani in this connection. He reported six cases in which he believed the sphincter was involved primarily, and states that the affection is most common in women, and that the chief symptoms are pain and tenesmus during and after defæcation. If local and general anti-syphilitic treatment do not succeed, he advises incision through the muscle. It should be mentioned that he believes the affection may develop comparatively early after infection. The question arises whether some at least of the cases were not instances of ulceration of the mucous membrane and secondary involvement of the muscle. It is at least curious that both symptoms and treatment should be the same as those of anal fissure.

REFERENCES.—"Lancet," March 22, 1890; "London Med. Record," Nov. 20, 1889; "Journ. of Cutan. and Genito-Urin. Dis.," June, 1890; "Lancet," Feb. 15, 1890; Münch. Med. Woch.," 1889; "Brit. Med. Jour.," July 6, 1889; "London Med. Record," Feb. 20, 1890; "Med. News," p. 631, Dec. 7, 1889; "Jour. des Maladies Syph. et Cut.," 1888; "London Med. Record," Nov. 20, 1889.

Synopsis.—(Vol. 1889, p. 457.) For venereal buboes, counter-irritation by painting over a large area with **Collodion**, mixed with **Iodine**, ℥j to ℥j of **Collodion**, may prevent suppuration. If pus form, aspirate and then distend cavity with **Carbolic** or **Corrosive Sublimate** solution. **Alanin**, v milligrammes dissolved in a cubic centimetre of water, administered hypodermically; for infants ij to v milligrammes (p. 12).

(Vol, 1890, p. 473.) For mercurial administration hypodermically, the **Yellow Oxide** and the **Salicylate** are best, mixed with **Paraffine** or suspended in **Mucilage**; **Chromic Acid**, grs. v to xx to ℥j, as a local caustic; **Acid Nitrate of Mercury** is as effective and a safer caustic; in tertiary nerve disease, **Mercury** is better than **Iodides**. ℞ Hydrarg. Bichlor. gr. $\frac{1}{12}$, Tinc. Ferr. Perchlor. ♏vj, Glycerini ♏xxv, Ol Caryophylli ♏j, Syrupi ad ℥j; to be taken after meals. In acute and chronic urethritis, **Sulphate of Thallin**, 1 to 2% solution, as injection, also the **Salicylate of Mercury** as follows, ℞ Hydrargyri Salicylatis gr. ¼, Sodæ Bicarb. gr. iij, Aq. Dest. ℥j; or **Sulphocarbolate of Zinc** injection, thus, ℞ Zinci Sulphocarbolat. gr. ij to v, Glycerini ℥j, Aq. Dest. ℥j. **Corrosive Sublimate** injection, 1 to 20,000, used from the very first day; Zeissler's method of filling the urethra with an antiseptic powder (**Boracic Acid** either alone or mixed with **Sulphate of Alum**, **Subnitrate of Bismuth**, etc.), introducing it through a cannula which is passed as far as the membranous urethra and slowly withdrawn while the powder is forced out; the bladder is emptied and the urethra washed out before the operation, which may be done under **Cocaine**; it may be repeated a few times, and an astringent injection used at the end of a week or two. In gummata of the nervous system, **Iodide of Potash**; in syphilitic inflammation, **Mercury** by inunction.

TABES DORSALIS. (See "Locomotor Ataxia.")

Synopsis.—(Vol. 1889, p. 13.) **Amylene Hydrate**, iijss gramme doses as hypnotic, and to diminish the lancinating pains.

TÆNIA. *Henry Dwight Chapin, M.D., New York.*

Areca Nuts have been recommended as a tænifuge in the form of powder, in doses of 60 to 120 grains. It is claimed by Barclay that the tænia will be expelled three or four hours after the introduction of this remedy. Other authors recommend a dose of 225 to 375 grains taken in milk after having allowed the patient to fast for twelve hours, and then following up its administration by a purgative. Castor oil, infusion of senna, or any of the common purgatives may be used an hour or so after the use of the areca nut, and since the latter is more active when the intestine is comparatively empty, it is evident that the diet for a day or two preceding should have been as restricted as possible. Arecaline is stated to constitute the active principle of the areca nut, and is the body to which its property as a tænicide is attributable; its composition and properties closely resemble pelletierine, one of the alkaloids extracted from pomegranate-bark, and which, like it, is a volatile liquid.

REFERENCE.—"Therap. Gaz.," Dec., 1889.

TALIPES. ("See Orthopædics.")

TENESMUS (Faucial and Pharyngeal). *Lennox Browne, F.R.C.S.*

So far as I am aware the term *tenesmus* has not been applied by others to describe a symptom so frequently complained of by sufferers from some throat lesions, and characterized by a continual inclination to void by hawking or swallowing a real or imaginary substance from the pharyngeal portion of the alimentary tract, usually accompanied by discomfort and straining—sometimes by actual pain—and resulting in the expectoration of a little mucus only, which occasionally—and especially on rising from sleep—is tinged by admixture with small quantities of blood.

I have elsewhere pointed out that this desire to strain and void something from the pharynx or upper food tract is in many respects analogous to a similar well-known symptom in the lower bowel, viz.; tenesmus; and the appropriateness of the term was forced on me by the observation that many patients with hæmorrhoids and rectal tenesmus not only complained of the desire to void something from the throat, but actually suffered from an homologous varicose condition of the vessels of the pharynx and fauces—in fact from **Throat Piles.**

Although the nomenclature I have recently ventured to adopt may appear to be a new departure, the facts and observations of which it was the outcome have long been in my mind, and were the subject of a communication by me to the Congress of Laryngologists at Milan, in 1880. In that paper I not only pointed out that so-called *globus*

hystericus was frequently associated with more or less constant fulness of the thyroid body of variable degrees, but I also called attention to previously unrecognized varix of the vessels and an enlargement of the papillæ at the base of the tongue. This last was independently described by Swain, in 1886, and more accurately alluded to by him as hypertrophy of the lymphoid tissue at the base of the tongue, and again more recently spoken of contemporaneously by myself and others as hypertrophy of the *lingual tonsil.*

In 1887 I figured and described the condition in the second edition of my treatise, and shortly afterwards McBride in discussing the subject before the Edinburgh Medico-Chirurgical Society fell into the error of stating that "it had not been touched upon by any British writer." In September, 1887, I repeated and amplified these views before the Philadelphia County Medical Society. During the last three or four years several quasi-original communications on lymphoid hypertrophy and varix of the base of the tongue have appeared from the pens of American and English contributors.

In former communications I have contented myself with drawing attention to the fact that the feeling of a foreign body or globus hystericus is frequently associated with lesion of the lingual tonsil and varix.

I now propose to shortly summarize the various conditions of which tenesmus *may* be a symptom. No apology is needed on my part for writing of a symptom as if it were a nonentity, because I venture to say that 50 per cent. of the patients who consult me with reference to their pharynx are the subject of that class of sensation which may be conveniently grouped together under the term *tenesmus.* Many complain of the feeling of a foreign body, or of a swelling, or of an ulcer at the back of tongue, but although the discomfort is referred to this site I find that the lesions giving rise to it are many and varied and by no means always confined to any one spot.

The local causes of tenesmus of the throat may be conveniently arranged under three headings: (*a*,) Those cases in which there is really a foreign body such as a fish bone, a plate of false teeth, or other foreign body, impacted in some portion of the throat; (*b*,) Cases in which there is some obvious hypertrophic lesion, especially of the lymphoid tissues in the fauces, or pharynx, congestion, with or without enlargement of the thyroid gland; (*c*,) Those cases in which there is no obvious lesion, and which are *essentially* neurotic. I write *essentially* neurotic in relation to this group, because it is probable that the neurotic factor plays a subsidiary part in *all* cases of throat tenesmus; varix for instance being often a result

of vasomotor paresis. Unless, therefore, we assume a neurotic factor how can we account for the circumstance that simple hypertrophy of the tonsils occasionally excites tenesmus in some individuals and not in others?

(*a*,) Of cases of tenesmus from the presence of a foreign body it is unnecessary to dilate; every-day experience teaches that the removal of the offending substance by no means leads to the immediate relief of the symptoms. Doubtless this is often due to the wounds inflicted; but when the injured mucous membrane has to all appearance healed, paræsthesia or dysæsthesia often remains for a longer or shorter period. This latter, in one instance at least which occurred in my practice, was due to wounding by a plate of artificial teeth and subsequent cicatricial contraction of the posterior pillars of the fauces.

(*b*,) Of the more obvious throat lesions with which I usually find this symptom associated I have already dwelt on hypertrophy of the lingual tonsil accompanied or not with a varicose condition of the veins. My own experience is that venous stagnation and varicosity is the cause of at first a sense of fulness and discomfort, often of a tired feeling especially after vocal efforts, and later of hyperæsthesia. Hypertrophy of the lingual tonsil alone without accompanying varix is not often associated with tenesmus, but cases do occur, and in such instances the symptom is doubtless due to contact of the base of the tongue with the epiglottis. Solisto Cohen has spoken of it as occasioning an imprisonment of the epiglottis, and McBride has pointed out that when tenesmus is due to this contact it is temporarily relieved by painting the approximated surfaces with **Cocaine.** It is possible that in some cases there may be distension of the obliterated duct of the thyroid gland which terminates at the point anatomically known as the foramen cæcum. I have also elsewhere insisted that amongst the causes of throat piles must be reckoned the abuse of alcohol and tobacco, with general or local vasomotor paresis, hepatic congestion, and even cirrhosis, with disturbed digestion, and in some instances disorders of the heart. Further corroborative evidence of obstructive or enfeebled venous circulation is often afforded in the presence of rectal and vaginal hæmorrhoids, varicocele, enlarged veins in the lower limbs, cold feet, etc.

(*c*,) Varicose conditions in the throat are more frequent in women than in men, and are often associated with some concomitant uterine or ovarian disorder. Tenesmus is moreover a prominent symptom of the menopause.

Varix is not confined to the lingual region. The next most common site is the posterior wall of the pharynx. I have a few cases of marked

varicosity of the soft palate extending in one instance to the uvula and pillars of the fauces to the extent of an angeioma, in which tenesmus disappeared after treatment by galvano-cauterization.

As I have incidentally mentioned hypertrophied faucial tonsils alone rarely give rise to tenesmus chronically ; anæsthesia is more frequently exhibited, but there are exceptions to this rule mostly in neurotic subjects, and I have recorded cases in which enlarged tonsils as well as post nasal adenoid hypertrophy have been the cause of barking cough in youug boys. This particular symptom, which has recently been treated of by Sir Andrew Clark, is also to be observed in neurotic girls in connection with delayed menstruation and ovarian irritation ; and in married women during pregnancy ; but in all these one or other of the objective conditions above-named will be found to co-exist as causes of this (apparently) hysterical or purely nervous cough.

Paresis of the soft palate with or without marked elongation of the uvula and palatal growths often give rise to tenesmus when these touch the base of the tongue or epiglottis.

Thickening of the epiglottis produces not only tenesmus but actual pain in tuberculosis, but not in the anæsthetic diseases such as lupus and lepra.

So far back as 1878, I insisted that varix was an invariable accompaniment of granular pharyngitis, and that destruction of the enlarged vessels by **Galvano-Cautery** was followed by a permanent shrinking of the granulations, while, if the latter only were healed, there was a great risk of recurrence.

Both posterior, granular pharyngitis, and granular hypertrophy of the lateral fold are potent factors in the causation of tenesmus. Hill recently testified to the marked relief afforded by curretting the salpingo-pharyngeal fold, and I have described the improvement which follows galvano-cauterization.

Pharyngitis sicca being associated as it is with partial rigidity of the normal mobile soft tissues of the fauces and pharynx, gives rise during the involuntary movements of swallowing saliva to a sense of impediment very akin to tenesmus.

In post nasal growths, whether adenoid, mucous, fibrous, or malignant in structure, the sensation due to the presence of the abnormal masses is not always so marked as we might expect, and is in many instances absent, and in strong contrast to post nasal catarrh, where the patient is generally fully cognizant of an accumulation of mucus behind the soft palate. Laryngismus stridulus, which might not unreasonably be considered as an exaggeration of tenesmus, is almost always associated with adenoids—pharyngeal and palatal.

Cicatrices and adhesions are only occasionally associated with tenesmus, and in such cases there has usually been some injury to the the posterior pillar of the fauces.

I find after a lengthy experience that if cases of globus and tenesmus with one or many of the above obvious and treatable lesions be eliminated there is left only a small residuum which can be set down as instances of a functional neurosis (true globus). I am, therefore, of opinion that the adjective "hysterical" ought to be abolished, as representing only an ignorance of the true cause.

It is not the place here to go into the lengthy question of treatment further than to say that systematic tenesmus is a most readily remedial complaint if the guiding principle of therapeutics be observed, to first discover and then not only remove the more obvious cause by local and special measures, but by due regard to the advantages to be gained from general internal remedies and dietary rules directed to the digestive and menstrual functions, and to the cardio-vascular and nervous systems.

TETANUS.

Synopsis.—(Vol. 1890, p. 478.) **Calabar Bean, Chloral,** and **Chloroform** in the first stage and at the crisis; **Bromides** and **Salicylates** in the declining stage; **Perfect Rest, Quiet,** and **Liquid Nourishment**; if the pains are intense, **Ergot** and **Powdered Belladonna** may be used. To destroy bacilli in their nidus, deep excoriations have been used and the place washed with 5 to 10% of **Sublimate,** or it may be cauterized with **Nitric** or **Sulphuric Acids**; **Purgatives** and **Diaphoretics** have been recommended to eliminate the poison and sedatives; injection of **Muriate of Pilocarpine** has proved successful.

THROAT. *P. Watson Williams, M.B.*

The ingredients of a lozenge, advocated by Dr. Solomon Solis, Cohen for the relief of dryness of the throat and mouth, which may occur in both acute and chronic morbid conditions of the mucous membrane, may be recommended.

℞ Fluid Ext. Pyrethrum	♏ 2 to 3	Powdered Acacia	gr. 2
Pilocarpine Hydrochloride	gr. ⅓	Glycerin	♏ 1
Pure Ext. Licorice	gr. 2	Sugar, enough to make	gr. 20

One of these may be taken every two, three, or four hours, as may be indicated.

Speakers and singers have informed the author of the preparation that the taking of some such lozenge just before a lecture or concert has enabled them to perform their part with comfort, which otherwise would have been attended with both pain and fatigue.

REFERENCE.—"New York Med. Jour.," Dec. 14, 1889.

Synopsis.—(Vol. 1890, p. 136.)—**Tinct. Jaborandi,** ♏xxx t.d.s., has given relief for dry throat.

THROAT (Diseases of). (See "Gout in the," "Larynx," "Pharyngitis," etc.)

Synopsis.—(Vol. 1889, p. 464.) In threatened neuropathic paralysis of gullet, **Bismuth** in large doses, a teaspoonful 3 or 4 times a day; solid food and condiments as local stimulants; a **Benzoic Acid Lozenge** a quarter of an hour before food, and a little wine or neat brandy often assists swallowing. Tonics as **Strychnia** and **Iron**; **Faradism** by the œsophageal electrode several times a day if possible. In myopathic paralysis the continuous current daily by the œsophageal electrode for a month, then **Faradism** for a month, and **Faradism** and **Galvanism** on alternate days during the third month. For spasm due to hysteria, passage of a bougie, also **Galvanism** by the œsophageal electrode; if due to gout, **Alkaline** treatment is useful, and if hyperæsthesia is marked, apply **Alkaline Solutions** locally, *e.g.*, **Bicarbonates of Soda** and **Potash**, and in extreme cases, **Cocaine**, 2½% solution or **Morphia**, by Mackenzie's œsophageal injector. When irritability is allayed apply xv or xx drops of a weak astringent lotion on alternate days, *e.g.*, **Nitrate of Silver**, grs. v to x to the ℥j; **Perchloride of Iron** or **Chloride of Zinc** may also be used, warming the solution and applying by œsophageal injector as near as possible to seat of spasm; after these use bougies if spasm persist. **Concillana Bark**, decoction for relaxed throat associated with gastric derangement (p. 34).

THYROID GLAND (Diseases of). (See also "Goitre.")

Synopsis.—(Vol. 1889, p. 468.) For hygroma of thyro-hyoidean bursa extirpation is necessary. For Crico-thyroid cysts puncture with or without junction, incision or excision. In cystic goitre, tap and inject **Perchloride of Iron** solution, ℥ij ad ℥j, through a cannula which is plugged and left for two or three days to excite suppuration; or the fluid may be drawn off by a small trochar and cannula, and six inches of catgut dipped in **Tincture of Iodine** introduced until it excites inflammation. In exophthalmic goitre, **Tinct. Verat. Vir.** gtt. x to xxx.

TINEA FAVOSA.

Synopsis.—(Vol. 1889, p. 471.) Remove crusts and apply parasiticides. ℞ Ung. Hydrarg. Oleatis, ℥ss, Adipis, ℥ss; or, ℞ Cupri Oleatis, ℥ss, Adipis, ℥j, M. Use the first a few days and then alternate it with the latter. ℞ Resorcini, ℥j to jss, Lanolini, Vaselini, Zinci Oxidi, Pulv. Amyli ãã ℥ij, M.

TINEA SYCOSIS.

Synopsis.—(Vol. 1889, p. 471.) **Boroglyceride**, 50% solution in **Glycerine.** If granulations be profuse, brush the part with infusion of **Jequirity**; ℞ Ac. Borici. ℥iv, Ætheris Sulph., ℥v, Sp. Vin. Rect. q.s. ad ℥xx. Apply three or four times daily. **Oleate of Copper**, ℥ss to ℥j; **Sulphur**, ℥j; **Ac. Carbolici**, ℥ss; **Lanolin c Olio**, ℥j.

TINEA TONSURANS. *W. Allan Jamieson, M.D.*

One of the most promising of the remedies proposed for the treatment of ringworm of the head is **Aristol**, a compound of **Iodine** and **Thymol** introduced by Dr. Eichhoff, and made by Messrs. Bayer & Co. of Elberfeld. It is a reddish-brown, amorphous powder, which is insoluble in alcohol, glycerine, and water, but easily dissolved in ether, or in fatty oils. To guard against decomposition it should not be exposed to light, and on the same account solutions should be prepared in the cold. It seems to combine the advantages of both its

constituents in increased degree. In ringworm it is employed as a 5 per cent. ointment, made by dissolving the **Aristol** in **Olive Oil**, and then mixing with **Vaseline**. The closely shaven head is washed twice daily with soap (preferably the superfatted potash soap made by Douglas of Eimsbüttel), and the aristol ointment well rubbed in.

Mr. Hutchinson relies chiefly on **Chrysophanic Acid** in chronic cases. His prescription is, in nearly all cases, as follows: The liquor carbonis detergens (Wright's) is used as a wash in the proportion of a teaspoonful to a pint of hot water. With this the scalp is to be well washed twice a week, and all scales and crusts removed. The hair is to be shaven or cut close. The curative ointment, which is to be rubbed in more or less freely, according to its effect, and night and morning, or every night only, by the same rule, is composed as follows:—

℞ Acid. Chrysophanic	5j	Adip. Benzoat.	5vj
Hydr. Amm. Chl.	gr. 20	Liq. Carb. Deterg.	♏x
Lanolini	5j		

Misce. Fiat ung.

This is strong enough to make most scalps redden and swell, and it may occasionally cause œdema of the eyelids and face, but the latter only when too freely applied. The secret of success consists in the patient continuance of the same remedy. He usually promises with great confidence a cure to the persevering, but never a rapid cure. It should be continued regularly for six months without interruption. Kerion presents almost the only phase of ringworm for which he varies his prescription. In it epilation and the use of a strong evaporating lotion (lead and spirit) is the best plan. As a prophylactic, when ringworm prevails in a family or school, it is important to use oils or pomades for those not affected. To keep the hairs greasy seems to be an efficient means of protecting them.

Dockrell recommends **Hydronaphthol.** After the head has been shaved it is washed with 5 per cent. hydronaphthol soap and as hot water as can be borne. When dried, strips of 10 per cent. hydronaphthol plaster are applied to the affected area and somewhat beyond. Outside the margin of the plaster a layer of hydronaphthol jelly, 10 per cent. previously melted, is painted on. This is removed in four days, the process repeated, only that a 20 per cent. plaster is used for a week. Then the 10 per cent. plaster for ten days, when, according to him, the disease will be found cured. During the plaster treatment a 5 per cent. ointment is to be applied to the unaffected portions of the head night and morning.

Unna regards **Chrysarobin** as the most effectual remedy we possess

in the mycoses of the skin, its drawback in tinea tonsurans being the risk of its occasioning conjunctivitis. To obviate this he causes the hair to be cut very short. A circle of **Zinc Glycerine Jelly** is now painted round the forehead, sides and back of the head. The whole area of the scalp included within this must be carefully anointed with a strong chrysarobin pomade, such as :—

℞ Chrysarobini	5·0	Ichthyolis	5·0
Acidi Salicylici	2·0	Ung. Simpl. ad	100·0

A piece of gutta percha tissue reaching to the centre of the circle of glycerine jelly is now placed on, secured by painting over with another layer of jelly, a strip of muslin placed on, and over all a flannel skull-cap. In course of twenty-four hours the cap is removed, the impervious covering slit across at one side, and thrown back, the head wiped dry, and then fresh pomade applied, the gutta-percha re-placed, and the opening closed with a fresh piece of muslin plaster, and the cap replaced. If this is carefully done, at the end of the fourth day, when the first course of chrysarobin is ended, only the upper edge of the jelly should be stained yellow. Should the stain have reached the outer margin, the discoloured part is to be wiped off and the jelly renewed. On the fourth day the cap is removed, the chrysarobin salve wiped off completely, and replaced by an **Ichthyol Salve** of a 5 per cent. strength. This is intended, in the remaining three days of the first week to cause the separation of the horny layer impregnated with chrysarobin, rapidly and without irritation, and to restore the subjacent integument to its normal colour. Now, for the first time, at the end of the first week, one can without any risk wash off the coating of jelly completely from before backwards, and cleanse the entire head with oil and soap. The diseased parts now stand out sharply as white patches against the neighbouring sound ones, and are seen to be more numerous than was anticipated. The second cycle now commences, and is to be carried out in the same manner as the first. In Unna's experience a third and a fourth cycle of one week each are sufficient to complete the cure, but more may be needed in old and severe cases.

REFERENCES.—"Monat. für prakt. Dermat.," Jan. 15, 1890; "Arch. of Surg.," Jan., 1890; "Lancet," Nov. 30, 1889; "Monat. für prakt. Dermat.," Dec. 15, 1889.

Synopsis.—(Vol. 1889, p. 469.) Shave the head; wash frequently with soft soap; a cap of oil silk or linen is to be constantly worn, and a new one supplied every fortnight; all brushes and combs as well as bonnets or hats used previously are to be destroyed; epilation is useful after treatment has loosened the hair, and the sensibility may be deadened by **Glycerine** and **Carbolic Acid**, or **Cocaine 10%** in **Lanolin**; **Oleate of Copper** loosens the hair. In

children over four years old, use **Coster's Paint** (Iodine, ℥ij, light oil of wood tar, ℥vj, M.; shake before using). **Creasote** or **Oil of Cade** may be used instead of the light oil of wood tar. In recent cases **Glacial Acetic Acid** with Hydrarg. Perchlor., grs. iv to the ℥j is useful. **Galvanism** with the positive electrode saturated in 3 to 5% solution of **Bichloride of Mercury**, and applied for 10 or 15 minutes to the diseased spot (but this causes much pain), and **Salicylic Acid** as ointment, ℥j to ij to the ℥j, or as a lotion, grs. xx to ℥j of **Spirit, Ether**, or **Chloroform**; ℞ Ac. Carbol. Pur., Ung. Hyd. Nit., Ung. Sulph., equal parts of each, mixing the carbolic and sulphur first, and then rubbing in the citrine ointment without using heat. **Croton Oil** used over a small area, but never in young children. Sponging the part every day or two with a weak alcoholic solution of **Thymol, Borax, Naphthol**, or **Mercuric Bichloride**, and afterwards thoroughly saturating with a 50% solution of **Boroglyceride**, or a small quantity of **Oleate of Copper** ointment rubbed in each night. Water must not be used for the part while under treatment.

(Vol. 1890, p. 481.) Shave the hair, wash with warm water and the over-fatty **Potash Soap**, and the following ointment worked well into the affected parts by the aid of a brush with stiff short bristles, ℞ Sulph. Præcip. ℥j, Hydrarg. Ammon. ℥ss, Thymol. gr. x, Vaselini ℥j, Ung. Simp. ad ℥j, M. Some **Carbolic Glycerine** is smeared over this, and the application is repeated daily.

TINEA VERSICOLOR.

Synopsis.—(Vol. 1889, p. 471.) Wash the skin with soft soap and rub in a parasiticide, *e.g.*, **Sod. Hyposulphitis**, ℥j, **Aq. Dest**, ℥vj. Friction with powdered **Pumice Stone**, 50 parts and **Soft Soap**, 100 parts. **Oleate of Copper**, ℥ij; **Lanolin**, ℥ij; or **Resorcin**, grs. x; **Adipis**, ℥j. The parts being first sponged for a few days with ℞ Thymol, ℥j; Sp. Vin. Rect., ℥j, **Glycerine**, ℥ij, M.

TONGUE (Diseases of).

Synopsis.—(Vol. 1889, p. 472.) For Hypertrophy of lingual tonsil, destroy the adenoid tissue with the **Galvano-Cautery, Nitrate of Silver**, or **Chromic Acid**. When dorsal lingual veins are enlarged, use **Galvano-Cautery**, or apply **Iodine** or **Iodide of Potassium Ointment** to submaxillary region, and relieve the portal circulation. For ranula, puncture with a hypodermic syringe, inject **Cocaine** solution 10%, leave it in for four minutes and then inject x or xii drops of 10% solution of **Chloride of Zinc**.

(Vol. 1890, p. 482.) For *Fissure of Tongue*, **Papayotin**, 10 to 20% solution in glycerine and water; an intractable case was cured by **Opium** internally and a simple **Carbolic** mouth wash.

TONGUE (Eczema of the). *P. Watson Williams, M.B.*

There are three principal indications for treatment: (1,) Treatment of the diathesis, and especially of digestive derangements; (2,) Scrupulous cleanliness of the buccal cavity; and (3,) Treatment of the local lesions. The general treatment comprises the use of thermal waters with alkalies internally, to the exclusion of arseniated preparations. Digestive troubles—neurasthenia and dilatation of the stomach must be carefully dealt with, and one of the best, though not the most pleasant, methods is irrigation of the stomach with a solution

of **Naphthol**, associated with the **Salicylate of Bismuth.** Constipation usually present must be combated *sec. art.* The mouth must be carefully overhauled, and if any decayed or damaged teeth be discovered, such as might give rise to irritation on the corresponding part of the tongue, these should be removed or filed smooth. The use of condiments and spices should be forbidden, and the use of tobacco is absolutely inadmissible. The mouth should be washed out with emollient or alterative liquids at frequent intervals. Topical remedies are of undoubted utility, but require to be adjusted to the requirements of particular cases. **Boracic Acid, Sulphur**, and its principal compounds (especially the **Hyposulphate of Soda**), **Lactic Acid**, solution of **Resorcin**, each very useful, should be employed. If the tongue be very sensitive, solution of **Cocaine** ($\frac{1}{10}$) or **Salicylic Acid** ($\frac{1}{2\frac{1}{2}}$) is to be preferred. These last drugs must be used with caution in children on account of the readiness with which they are absorbed.

REFERENCE.—Moleus, "London Med. Rec.," Feb. 20, 1890.

TONSILLITIS.

Synopsis.—(Vol. 1889, p. 53.) Application of Menthol, 25% solution.

TONSILS (Hypertrophy of).

Synopsis.—(Vol. 1890, p. 483.) Ignipuncture by thermo-cautery after applying Cocaine, repeating the operation twice a week for five weeks if necessary, and using astringents locally in the intervals.

TORTICOLLIS (Spasmodic). *Graeme M. Hammond, M.D., New York.*

Mr. Mayo Collier relates the treatment of a case of spasmodic torticollis which he successfully relieved by ligaturing the spinal accessory nerve. The patient had suffered from the disease for seven years. The incision was made at the point where the nerve emerges at the outer border of the sterno-mastoid muscle. Taking the nerve as a guide he tunnelled through the muscle for some distance, using a moderate amount of traction on the nerve, but avoiding injury, as far as possible, to the muscle. A loop of silver wire was then placed around the nerve as high up as he could reach and the ends were twisted just enough to ensure slight compression. The wound was treated in the usual way, the ends of the loop protruding. The spasms ceased at once, and had not returned after an interval of several months. The skin was allowed to grow over the ends of the loop. Free movements of the sterno-mastoid and trapezius muscles were not diminished.

REFERENCE.—"Lancet," June 21, 1890.

TREMOR.

Synopsis.—(Vol. 1889, p. 45.) Hyoscin, gr. $\frac{1}{5\frac{1}{2}0}$ to $\frac{1}{1\frac{1}{6}0}$ as hypnotic and to relieve the movements.

TUBERCULAR DISEASE OF JOINTS. (See "Joints, Tubercular Diseases of.")

TUBERCULAR MENINGITIS.

Synopsis.—(Vol. 1890, p. 486.) Iodoform Ointment inunctions.

TUBERCULOSIS (Koch's Treatment of).

P. Watson Williams, M.B.
Frank J. Wethered, M.D.

The probable *therapeutic* value of bacteriological studies has been foreseen for some years by those whose experiments had already demonstrated the *prophylactic* importance of their investigations, and although one cannot help being glad that the discoverer of the pathogenic microbe of tuberculosis should have the credit also of discovering its antidote, no one would regret more than Professor Koch himself that the contemporaneous investigations of other workers in analogous diseases should not be duly recognized.

Ten years ago Pasteur showed that the chief symptoms of fowl cholera followed the inoculation of the sterilized products of the fowl cholera microbe, and in 1883 Charrin, experimenting with the bacillus pyocyaneus, a bacillus which grows on dressings and wounds, giving rise to a blue colour, found that vaccination with small doses of the sterilized culture fluid rendered the animals operated upon insusceptible when subsequently inoculated with a pure culture of the bacillus pyocyaneus. Since that time it has been shown that pathogenic microbes secrete toxines which constitute vaccines rendering the body immune from the disease of which they, the microbes, are the prime factors. The first discoveries bearing directly on the toxine secreting properties of microbes were those of Roux and Yersin, who experimented with the Löffler bacillus of diphtheria. They showed that a poison existed in cultures of this bacillus which, when dissolved in water and filtered so as to be free from micro-organisms, was capable when injected of producing symptoms exactly similar to those following inoculation with the bacilli themselves.

Brieger was the first to obtain pure crystalline products from the syrupy extracts of earlier investigations. He found that products of saprophytic germs were less poisonous than those obtained from the pathogenic microbes; he therefore termed the latter products toxines, restricting the word ptomaines for the products of putrefactive germs. The more poisonous toxines include the products which he has called "typhotoxin" and "tetanin," and which on injection produce symptoms of typhoid fever and tetanus respectively.

Brieger and Fraenkel's further investigations have led them to the discovery that a filtered culture fluid of the bacilli of diphtheria heated

to 60° or 70° C. can be successfully utilized as a protective agent. When subcutaneously injected in a guinea-pig, the animal is rendered immune from the effects of subsequent inoculations with diphtheritic virus.

E. O. Hankin has gone a step further, for he has by ordinary chemical methods isolated an albumose from anthrax culture fluids, which by inoculation in small doses confers immunity against anthrax ; but if the dose be comparatively large the animal dies with the symptoms of anthrax. He believes, as the result of his experiments, that the anthrax bacillus is able to continue to live in the body of the infected animal owing to the secretion of a slowly formed albumose, which destroys the germ resisting power of the body. If a large amount of this poisonous albumose be injected, the bacilli easily gain entrance into the body, and the animal dies : but if only small doses are injected an acquired tolerance of the virus is induced, and the albumose formed by the bacilli subsequently injected is no longer capable of overcoming the germ-resisting powers of the tissues ; consequently the bacilli are unable to live in the body.

Dr. Sidney Martin, working at the toxines of anthrax cultures, has obtained two poisonous proteids ; but what is of far greater interest, he has also separated an alkaloid similar in its action to these anthrax albumoses, though much more powerful. The discovery of this alkaloid may soon lead to further investigations, giving us some idea of the chemical processes required to confer "immunity," and of the action of bacillary albumoses on the organism.

May we not hope soon to prepare the necessary alkaloids synthetically, or substitute for them simpler inorganic substances whose chemical affinities will produce the required effects ? Possibly we shall ere long have solved many other obscure therapeutical problems, as, for instance, the remarkable tolerance of iodides in syphilis, and the beneficial results following their administration, and understand clearly the action of trichloride of iodine by the hypodermic injection, of which Behring and Kitasato claim to have conferred immunity from tetanus and diphtheria.

The observations of Armand Ruffer on the action of microphages and lymphocytes show most clearly that, even if in the future "immunity" may be more or less a chemical problem, in *acquired* specific diseases the infecting microbe is overcome by complex biological processes, and it behoves us to be extremely cautious not to interfere with these natural therapeutics of the tissues in our endeavour to prevent the formation of albumoses, or in introducing their chemical antidotes.

In connection with these more recent views the observations of John

Hunter on mercury in syphilis are of very great interest. He writes : "It appears to me, beyond a doubt, that no two actions can take place in the same constitution, or in the same part, at one and the same time." On this view he explains the specific action of mercury in syphilis : "When the venereal matter is circulating I have supposed that certain parts are irritated by it, and that a vast number of others escape, as is evidently the case with chancre," *i.e.*, the syphilitic virus (which Hunter proved was of the "nature of a ferment," without, of course, recognizing the micro-organism which we now know is essential to this specific ferment) exhibits an elective affinity for certain tissues. He goes on to show that mercury has likewise an elective affinity for particular tissues, and accounts for its specific action by its "producing an irritation in the constitution which counteracts the venereal and entirely destroys it upon the principle of destroying the diseased action of the living parts, counteracting the venereal irritation by producing another of a different kind."

M. Anzies Turenne, of Paris, in 1850 proposed to use inoculations of syphilis virus as a prophylactic and curative agent in syphilis, the virus being first passed through animals. Many instances are on record of the cure of chronic ailments after an attack of small-pox. Dr. Copland, in his medical dictionary, considers that the small-pox virus destroys the constitutional tendency to consumption, and remarks that neither he nor any of his friends remember to have seen a consumptive patient who had previously had small-pox.

These facts, which give but the barest indication of the views held and the results obtained by past and contemporary investigators, seem sufficient to show that the principle of Koch's method has long been recognized as possible, and may serve to render the nature of Koch's lymph and its action in tuberculosis more comprehensible. It is certainly a matter for regret that, as it appears, Professor Koch's hands were forced by higher authorities, and that the remedy should have been introduced to the medical profession before he felt justified in indicating more clearly the *nature* of his lymph, although the professor may have been unable to perfect, and therefore to publish the details of the processes of preparation.

Composition of the Remedy.—The remedy with which the new therapeutic treatment of tuberculosis is carried out is *a glycerine extract of pure cultivations of tubercle bacilli.*

In addition to the active principle, this extract contains all the other substances of the cultivation which are soluble in 50 per cent. glycerine, *e.g.*, mineral salts, pigment, and other unknown extractives. Some of these can be removed without difficulty, and a perfectly colourless dry

extract, which contains the active principle in a much more concentrated form than the original glycerine solution, obtained. But as the substances removed are harmless to the human organism, there is no advantage in this purifying process, which only adds to the expense of its preparation.

As regards the active principle itself, Koch states that its constitution must as yet be only a matter of conjecture, but that it seems to him to be a derivative of albuminous bodies, and to be in close relation to them. It does not belong to the group of so-called tox-albumins, since it withstands high temperatures and is readily dialysable. He estimates the quantity of the active principle present in the extract as supplied to the profession at fractions of 1 per cent. When we remember that this 1 per cent. solution is diluted a hundred times before we use it, and that of this diluted solution a dose of 1 milligramme, therefore, contains $\frac{1}{10000000}$ of a gramme of the actual remedy, it will be readily understood that we have to deal with a substance, the action of which far exceeds that of the strongest drugs known.

Mode of action of the remedy.—Koch believes that it acts by increasing the extent of the coagulation-necrosis, which Weigert has shown, is produced in the tissues around tubercle bacilli by the products of the bacilli in those tissues. The tissue having become necrotic, is in a condition so unfavourable to the nutrition of the bacilli, that it is unable to develop further, and finally in some cases, it drops off; and he argues that if this necrosis-producing substance be added artificially to that contained in the tissue surrounding the bacillus, the necrosis would then extend further, and thus the conditions of nutrition of the bacillus would be much more unfavourable than is usually the case. It is in calling forth such changes that, according to Koch's view, the action of the remedy seems to consist.

Method of Diluting and Injecting.—The fluid, when diluted with distilled water only, will not keep. Bacterial growths soon develop; it becomes cloudy, and is unfit for use. Instead of water only, therefore, a ½ per cent. solution of carbolic acid is used. The *method of dilution* is as follows: 1 c.c. of the original solution is measured off by means of a pipette, and placed in a graduated measure. To this 9 c.c. of the dilute carbolic acid solution is added, thus forming a dilution of one in ten, called the mother solution. In this strength the mixture keeps well. When required for use 1 c.c. is then taken and further diluted with 9 c.c. of the carbolic acid solution, thus forming a 1 per cent. mixture of the original fluid. One milligramme of this will equal ·001 of the original fluid, whilst 1 centigramme will correspond to ·01.

All the vessels, pipettes, etc., must be carefully sterilized before use.

The most convenient method of doing this is to wash them with absolute alcohol, and thoroughly dry them. If any of the alcohol remains it will produce a cloudiness when it comes in contact with the diluted lymph. For *making the injection* a syringe holding 1 cubic centimètre and graduated in millimètres should be employed. Koch's syringe, which must now be familiar to every medical man, consists of a small graduated glass tube, to one end of which the hypodermic needle fits, and to the other a small rubber balloon and stop-cock. Before use the syringe should be sterilized by washing with absolute alcohol, and subsequently be washed out with distilled water. Remove the balloon, fill the syringe from above with the required amount of the 1 per cent. solution of Koch's lymph (the needle being pressed against the finger to prevent its escape), attach the balloon, and turn off the stop-cock. Having washed the skin where the puncture is to be made with 1 in 20 solution of carbolic acid or other antiseptic, the puncture is made and the tap turned on. As much fluid as is required is then expelled by pressure on the balloon, and the stop-cock once more turned off (to prevent reflux of the fluid) before finally withdrawing the needle.

Koch's syringe is very easily cleaned, but requires very dexterous handling. The Overlach syringe is as readily sterilized as Koch's, and is quite as easy of use as the ordinary hypodermic syringe. The plug of the Overlach is made of asbestos, so that it cannot be affected by the alcohol. Dujardin-Beaumetz uses Roux' syringe, having an elder-pith plug. Dr. J. Ward Cousins' syringe is simple, cheap, and easily sterilized. The loose skin between the shoulder blades affords the best site for the injection.

As regards the *diagnostic value of the lymph*, it is a remarkable fact that a tuberculous patient will respond to a far smaller dose than a non-tuberculous person. As far as is at present known, no healthy, or rather non-tuberculous human being will react to a smaller dose than ·01 of the original fluid. If, then, this quantity be administered and no reaction follow, we may generally assume that no active tubercular disease exists. If a slight effect is produced, then half this dose must be given in order to ascertain if there be any reaction. If no results follow we may again assume that we are not dealing with tuberculosis. Certain apparent exceptions to this rule occasionally occur, as in two cases now under treatment at the Victoria Park Chest Hospital, male adults, both undoubtedly tubercular, as shown by the discovery of tubercle bacilli in the sputum, and in another case at the Bristol Royal Infirmary, whose sputum was crowded with bacilli, and in whom well marked physical signs had rapidly developed. In the

first two cases no reaction whatever occurred after injections from ·002 to ·007 doses. In the third case, at Bristol, the only reaction to similar doses was slight headache and aching in the limbs.

These cases may *possibly* be explained by supposing that there is no living tubercular tissue present in either case, but that old cheesy nodules are still present, from which the bacilli come, for, as we shall presently see, Koch states that his fluid only affects living tubercular tissue.

Another case at Victoria Park is also interesting from an opposite standpoint. A girl, aged nineteen, who was apparently convalescent from anæmia, and in whom no tubercular lesions could be detected, was inoculated with a dose of ·01. To the surprise of everybody the temperature rose to 101°. Following the rule recorded above, the second dose of 5 milligrammes was administered, the temperature again rising to 103·2, accompanied by a slight cough and pain and swelling in the knee joints, which soon subsided. The patient was subsequently injected several times, and on each occasion a slight reaction was noticed, but as far as the case has at present gone no other evidences of tuberculosis can be found. Whether the diagnostic worth of the lymph in this case will be triumphantly proved or not it is, of course, impossible yet to determine.

Effect of Injections in Healthy Individuals.—Professor Koch inoculated himself with a ·25 c.c., and thus describes the symptoms following: "Three to four hours after the injection there came on pain in the limbs, fatigue, inclination to cough, and difficulty of breathing, which speedily increased. In the fifth hour an unusually violent attack of ague followed, which lasted almost an hour. At the same time there was nausea, vomiting, and rise of body temperature to 39·6 C. After twelve hours all these symptoms abated. The temperature fell until next day it was normal, and a feeling of fatigue and pain in the limbs continued for a few days, and for exactly the same time the site of the injection remained slightly painful and red."

Action in Tuberculous Cases.—This is both local and general. The general reaction consists in a rise of temperature, generally preceded by rigors, and reacting to 101° to 105° F., or even higher. (In one case under our observation 105·7° F. was recorded.) This is accompanied by pain in the limbs, increased cough, a sense of weakness, and nausea or vomiting, cardiac excitement, with a marked increase in the pulse rate, often altogether out of proportion to the rise of temperature, and increased respiration; thus a pulse rate of 120° to 140° is not infrequent. In one case we observed a pulse of 180° in the height of the reaction. This is succeeded by cardiac depression, and

the tendency to cardiac failure must be borne in mind in using large doses, and in patients with weak hearts. Respiration, besides being increased in frequency, often becomes difficult, simulating a mild attack of asthma. In one case reported from Innsbruck death resulted from cardiac paralysis thirty-six hours after an injection of so small a dose as 2 milligrammes, the patient being a robust girl with lupus of the face. We have also seen a case in which acute pericarditis supervened in the height of the reaction following a centigramme dose in a similar case.* The lymph seems to resemble snake venom and narcotic poisons in its depressing action on the cardiac and respiratory centres. We would therefore suggest subcutaneous injections of **Sulphate of Strychnine,** when such symptoms arise in course of treatment, as the most appropriate physiological antidote. In many cases a scarlatinaform rash, or more rarely a slight icteric discoloration has been observed. The reaction generally begins about four or five hours after the injection, reaching its height in about nine hours, and then gradually passes off, lasting about twelve to fifteen hours altogether. Occasionally it is delayed, and then is usually less marked.

The local reaction is best observed in lupus. A few hours after injection the lupus spots begin to swell and to redden. Around them is a bright red zone of variable extent, producing an appearance very much as though an attack of erysipelas had supervened upon the lupus. A yellowish serum then exudes, which quickly dries into thick yellow crusts. These fall off after two or three weeks, leaving a clear red cicatrix behind. Occasionally the local reaction is so severe that the patches appear gangrenous, the resulting scab falling off like a mask, as was observed in some cases at Von Bergmann's clinic at Berlin.

Koch states that the tubercle bacilli themselves are not destroyed, but only the living tissue upon which they feed ; "beyond this there is, as shown by the visible swelling and redness, considerable disturbance of the circulation, and evidently in connection therewith deeply seated changes in its nutrition, which cause the tissue to die off more or less quickly and deeply, according to the extent of the action of the remedy. The remedy does not kill the tubercle bacilli, but can only influence living tuberculous tissue ; it has no effect on dead tissues, as, for instance, necrotic cheesy masses, necrotic bones, etc. ; nor has it any effect on tissue made necrotic by the remedy itself." Such being the case, it is of course an important question what becomes of the separated dead tissue ? If the lesion be near the surface the necrotic mass can be readily thrown off. If deeply seated, the dead tissue may be unable to find an exit. There are then three possibili-

* This patient had a trace of albumen in his urine on admission to the hospital

ties : (1,) The necrosis containing living tubercle bacilli may remain *in situ*, in which case subsequent auto-infection would probably occur ; (2,) The necrosed mass may become encapsuled ; (3,) The bacilli, being deprived of pabulum necessary to their existence, they may be starved, so to speak, and the caseous matter being absorbed, a perfect cure result.

The Method of Administering the Remedy in Phthisis is as follows . Begin with an injection of 1 milligramme of the 1 per cent. solution. (In children the initial dose should not exceed ½ a milligramme.) If this is followed by a reaction we wait till the temperature becomes normal, and then the same dose is administered and repeated till no reaction occurs. Two milligramme doses are then given, and the same measures adopted, and so on until 1 centigramme is reached. After this has been given two or three times without reaction, the dose is further increased until that of a decigramme is attained. Higher than this it is not safe to go, and we may then conclude that the absence of any reaction is an indication that no active tubercular disease remains.

The treatment has been too recently introduced to enable us to come to any definite conclusion as to the permanency of any improvement, or to decide as to whether inoculated patients are rendered immune for a short or long period, and if the profession generally were content with the modest and guarded expressions of Professor Koch himself in reference to the beneficial results of his remedy, the public would be saved from much disappointment and the medical profession from loss of dignity. This much, however, we can safely say, that in the advanced stages of the disease no benefit can be expected ; but in its early stages more rapid and decided improvement takes place than by any previously known method, either hygienic or therapeutic. While avoiding the use of drugs that may interfere with the action of the lymph, every hygienic and therapeutic measure that are likely to assist in the cure must be adopted.

In Lupus the doses are larger, although from recent experience, both in Germany and in England, it has been found safer to begin with smaller doses than was at first thought advisable. In adults, 5 milligrammes is the usual initial dose ; in the case of children the dose will, of course, be proportionately lower. Most cases of lupus react well to this amount, and at least a week is allowed to elapse before another injection of the same strength is given. When no reaction follows, the dose is gradually increased, as in the case of phthisis, each time, however, waiting for one week between the inoculations. Most beneficial results have been obtained by this treatment, and although

no actual "cure" has yet been proved, and some one or two relapses of cases thought to be cured have been reported, there seems to be less fear of a relapse than after the ordinary operations of scraping or application of caustic.

(For Koch's treatment in diseases of joints, larynx, and bladder, refer to the general articles on these subjects.)

REFERENCE.—"Brit. Med. Jour.," Jan. 17, 1891.

Koch's Treatment in Surgical Diseases.

E. Hurry Fenwick, F.R.C.S.

The patients who have as yet been subjected to this method have been suffering from: (1,) Joint and bone disease of a tubercular type; (2,) Tuberculous glandular swellings; (3,) Genito-urinary tuberculosis.

STATEMENTS.

Professor Koch has stated "that glandular bone and joint tuberculosis has been treated, large doses of the remedy at long intervals being made use of. The result was the same, speedy cure in recent and slight cases, slow improvement in severe cases." He is said to have further expressed his opinion ("Lancet," p. 1242, Dec. 6, 1890), "that the remedy would probably be more valuable in surgery than in medicine; for joint and gland disease in early stage was curable without further treatment. Caseous deposits would, however, require to be removed in the more advanced cases. Operative surgery would not be abolished or its field seriously diminished."

Sir Joseph Lister "combats the belief that it was impossible for the dead portions of tissue resulting from the treatment to be got rid of by other than surgical means." He stated "that provided these portions of tissue were preserved from septic agency they need not necessarily be separated from the living body as they were eliminated by absorption in the same manner as a catgut ligature. There was no reason to suppose that the fact of this tubercular tissue being destroyed would make it incapable of absorption."

The more recent microscopical examination of the morbid tissue around tubercular depôts by Dr. Israel shows that after treatment there is a zonular arrangement of the necrosed tissues, and in them very few tubercle bacilli are found; in the circumferential living tissue neither tubercles nor bacilli are found, and the number of giant cells are diminished.

CLINICAL EXPERIENCE.

(*a*,) *Joint Affections.*—The results of the method in tuberculous disease of the knee and hip joints have been carefully examined by many surgeons, notably by Prof. Bergmann (in whose clinic, at

Berlin, the reporter had every opportunity of following the treatment), Drs. Köhler, Schnitzler, Watson-Cheyne and others.

The joint becomes extremely swollen and painful, there is more or less limitation of movement, the leg becomes flexed or fixed, sinuses discharge less, and such discharge is thinner; the reaction temperature is not different to that observed in lupus, and the constitutional symptoms are the same. It has been latterly pointed out that such doses of the medicine as are calculated to promote rigors and vomiting are not necessary to ensure success. Thus, when the initial dose of 0·001 or 0·002 of a cubic centimètre, and the increase to 0·01, or more, is made by three or four advancing steps, these distressing symptoms have not ensued, and the maximum temperature has not been maintained for more than two hours. After the reaction is over, the joint swelling tends to subside, motion becomes freer, pain is diminished; in some the skin becomes reddened and abscesses form. Prof. Koch advises that such should be opened *after the reaction to the remedy had ceased to appear.* Incision into such abscesses shows that the divided skin and subcutaneous fatty tissue have undergone no appreciable change. Large pieces of decayed tissue saturated with pus are found free in the thin pus. They are very like the necrotic tissue found detached in acute abscesses, but the condition of the parts is quite distinguishable from that of phlegmonous suppuration: (1,) By its distinct limitation; (2,) By the absence of every appearance of hæmorrhage; and (3,) By the fact that the walls of the cavity are covered with a thick continuous cheesy deposit. Time alone can decide whether the manifest improvement in the slighter cases is permanent.

(*b*,) *Enlarged Glands.*—After the first injection the glands become very painful, and often greatly swollen and fixed; the scars left by previous incision, or evacuation, swell and become inflamed—the reaction temperature is often delayed in these cases—papular rashes seem not uncommon. In one case exhibited by Dr. Köhler, an acute ulceration in the inner and lower section of the cornea took place whilst the patient was under the treatment for tubercular glands.

(*c*,) *Genito-Urinary Tuberculosis.*—Few cases have been recorded. Very weak solutions should be commenced with on account of the danger of suppression, or dysuria, from swelling of the mucous membrane of the ureter and neck of the bladder. Profuse and dangerous hæmaturia has been observed. (See "Bladder.")

TUMOURS.

Synopsis.—(Vol. 1889, p. 70). Thuja Occidentalis Tincture, gtt. xx to lxxv per diem for tumours of ear, nose, pharynx, and larynx, also as palliative in epithelioma and cancer, using at the same time as an application, ℞ Tinct. Thujæ ʒj, Glycerini ʒij, Aq. ʒijss, M.

TYPHOID FEVER. *Frank J. Wethered, M.D.*

Perhaps the most important communication in reference to typhoid fever is Dr. Barr's series of lectures on the treatment of this disease by prolonged **Immersion in Water.** The patients are immersed in a tank. This consists of a well-made wooden box, 6 ft. long, 2 ft. 10 in. wide, and 12 in. deep. It is lined with lead, which is painted white, and coated with a thick layer of shellac varnish. The shellac makes the tank, on other occasions, a convenient medium for administering electric baths. Each tank is provided with a large discharge pipe, which, in the case of these tanks, communicates with a soil pipe which leads down to the sewer; we can thus empty the tank containing seventy gallons of water in three minutes. Each tank is provided with a sheet of bed ticking, which would about allow the patient to be submerged, but at the head there is a strip, about a foot wide, which does not sink so deeply, and on which rests an air pillow so as to keep "the head above water," which is a very essential matter in most conditions of human life. The patient is wrapped up in a blanket and completely immersed except the head. It is important to use a blanket for this purpose rather than a sheet, because frequently a small portion of the chest rises above the water, and the blanket being a bad conducter of heat, this portion of the surface does not get chilled, which would happen if a sheet were used. The tank is covered with a half lid (which prevents the weight of the bedclothing resting on the patient), a waterproof sheet and bedclothing to keep in the heat of the water. The tanks could easily be provided with a small circulating boiler to maintain a uniform temperature, but this is quite unnecessary, as we have found that the removal of a bucketful of tank water, and the addition of the same quantity of hot water every two hours, is sufficient to maintain a fairly uniform temperature, and a variation of one or two degrees is a matter of no moment. A thermometer is kept constantly in the tank. As long as the patient's temperature is over 100°, the temperature of the tank need not rise above 90° to 93°; but as the body temperature approaches the normal, so should the tank temperature. We have not found it necessary to lower the temperature of the water below 90°, nor raise it above 98°. A rise of a few degrees in the tank temperature is sure to send up the heat of the body, though to a less extent, and by regulating the heat of the water there is no fear of any collapse, as the temperature of the body cannot fall below that of the surrounding medium. The duration of the patient's stay in the bath varied from six to thirty-one days, and in every case in which it was tried a cure was the result. The patients were kept chiefly on a milk

diet. None of them had any alcohol during the course of treatment and very little physic. No antipyretics were given, and there was no attempt to prevent the usual evening exacerbation, but this was gradually lessened in intensity and duration, and the remissions became greater and longer. The pulse became slower, fuller, and of improved tension. The respirations lessened in frequency; the bronchitis and congestion of the lungs improved and soon disappeared. The improvement in the digestive tract was perhaps more marked than anywhere else; the tongue became clean and moist; the appetite and digestion improved; and the diarrhœa not only lessened, but the character of the motions changed for the better. This is essentially a method of treatment for severe and moderately severe cases; all, or nearly all, mild cases get well with little treatment except that of rest in bed with a regulated diet.

Dr. Bradfute treats of the treatment of typhoid fever by **Sponging.** After fully discussing the theoretical reasons for this treatment he gives the following directions for carrying it out "in a simple case of uncomplicated typhoid fever": The patient is sponged with tepid water, containing a little alcohol, twice daily, morning and evening irrespective of the temperature. If the temperature should reach 104°, simple cold water is substituted, and the patient sponged every half-hour or hour until the temperature falls. It is not necessary to employ antipyretic measures unless the temperature rises to 104°; below that point Nature is fully able to combat it herself. This simple method of reducing the fever has been uniformly successful in his hands, and he believes, when properly applied, it never fails. Cases with ugly complications are, of course, to be excepted. It may be added that the pleasant sensations and feeling of well-being which occur in a fever patient after a cold sponge bath introduce a psychical element which is not without a favourable influence in the course of the malady.

Dr. J. Michell Clarke advocates **Hydronaphthol** in the treatment of enteric fever. After an elaborate series of experiments he came to the conclusion that with patients on milk only, hydronaphthol may be given without fear of serious interference with digestion, although with other diets it is very liable to disagree. Dr. Clarke has generally prescribed it in gelatin capsules or simply suspended in milk, but it would probably be equally efficacious given in pill form, coated with keratin. As to the dose, 2 to 3 grains every two hours are sufficient; in diarrhœa, after the first 3 to 6 doses it may be given every three or four hours, provided the effect is maintained. For children under one year the dose is ½ grain; to older children, ½ grain to

1 grain every hour or every two hours, or less often according to circumstances.

In order to prevent the spread of typhoid fever it is of course very important to disinfect the stools. Prof. Uffelmann has published the results of a series of observations which he made with the view of determining the best mode of attaining this object. He finds that the most active of all are the mineral acids—sulphuric and hydrochloric—then corrosive sublimate, carbolic acid, etc. He points out, what is often overlooked, that the duration of the influence of the disinfectant upon the motions is of the utmost importance; and that even with the most powerful of these substances it is impossible to destroy infectious matter within a few minutes. He recommends for the thorough disinfection of fluid or semi-solid stools the following methods: Sulphuric or hydrochloric acids, diluted with double the quantity of water, should be mixed with equal parts of the fæcal matter, and allowed to stand in the case of the former acid two hours, with the latter twelve hours. In using carbolic acid, a 5 per cent. solution ought to be taken, added to the stools in equal parts, and left for twenty-four hours. Sublimate should be employed as 2 parts in 1,000 with half a part of hydrochloric acid. An equal quantity of this is added to the motions and set aside for at least half an hour, but preferably for twenty-four. Quicklime ought to be added to the stools in the proportion of 2½ per cent., and allowed to remain twenty-four hours; while in the case of lime-water a similar time should be given, and the disinfectant employed in the ratio of 2½ parts to one of fæces.

Dr. F. de Havilland Hall called attention in the "Medical Annual" of 1890, to Ehrlich's test in typhoid fever in which a reaction was produced in the urine with one of the aniline derivatives, and a description of the process was also given. Since then, numerous observers have testified to the value of this test. Rütimeyer has made a series of experiments and states that the "Diazo-reaction" (see also under "Urine, Examination of"), is useful both in diagnosis and prognosis, and is especially valuable in typhoid and phthisis. In the latter disease it denotes absorption of caseous matter; when persistent, rapid mischief and a fatal termination is to be expected. In cases of general miliary tuberculosis it is almost always obtained. In typhoid it is chiefly of value as a negative test, for if the reaction cannot be obtained it is not a case of enteric fever—with this reservation, that the reaction does not take place after the eighteenth day. The test is never observed in health, in hysteria, myelitis, hepatitis, diabetes, cystitis, pyelonephritis, or surgical diseases. It is occasion-

ally present in cancer of the stomach and œsophagus, chronic nephritis, caries of bone, pyæmia, scarlatina, tubercular meningitis, and heart disease. It is more frequently obtained in measles, malignant diseases of the peritoneum and croupous pneumonia.

REFERENCES.—"New York Med. Jour.," Mar., 1890; "Practitioner," Jan., 1890; Ibid., July, 1890; Ibid., Feb., 1890.

Synopsis.—(Vol. 1889, p. 472.) In cases seen early a sharp **Mercurial Purge**; **Quinine**, grs. ij 4tus hor. until fever subsides; **Antifebrin**, gr. j to iij, first dose usually at 1 p.m. and the second at 5 p.m. each day, this being sufficient to reduce temperature usually; **Carbolic Acid**; R Ac. Carbol. (Calvert's pure solution for internal use), ♏xij, Tinct. Iodi., ♏xvj, Tinct. Aurant. Cort., ℥jss, Syr. Simp., ℥iij, Aq. ad ℥viij, Sig. An ounce every four hours during the first fortnight or until urgent symptoms yield, and then thrice a day. If vomiting set in, reduce dose of **Carbolic Acid** and add a small quantity of **Ac. Nitro-hydrochlor. Dil.**; avoid aperients, but an enema of warm soap and water, or a small quantity of castor oil emulsified in water with the yolk of an egg, may be used if necessary. During convalescence small doses of **Belladonna** and **Olive Oil** may be used to relieve bowels; **Magnesium Salicylate**, grs. 50 to 100 daily as antipyretic, and antiseptic, not contra-indicated by diarrhœa being present; **Caffeine** subcutaneously in collapsed conditions, using **Caffeine Solution** 25% with an equal quantity of **Benzoate of Sodium** to help solution and render it more painless. **Geranium Maculatum** used as rectal injection (p. 42). **Strophanthus**, ♏iij to vj every six hours as antipyretic (p. 68).

(Vol. 1890, p. 490.) Clear intestines with **Calomel**, and then give β-Naphthol. R Naphthol Beta grs. xl, Bismuth Salicylate grs. xl, M.; divide into ten powders and give one every hour in a wafer or mixed with a little milk or brandy; omit the **Bismuth** if diarrhœa is not marked. If constipation exist use the following, R Naphthol Beta grs. xl, Magnesia Salicylates gr. xl to lxxx; to be divided and used as above. **Calomel** should be only used within the first five days; graduated **Cold Baths** to reduce fever; **Antipyrin**, 5 grammes divided into three doses, given hourly, beginning after 6 p.m.; **Thallin** and **Acetanilide** are also useful. If slight cerebral symptoms set in, an **Ice-bag** may be applied to head but not continuously, but in severe cases graduated **Baths** with cold affusions must be used; **Morphine** hypodermically for insomnia; **Camphor, Wine, Champagne**, and **Brandy** to combat cardiac weakness; **Starch** and **Opium** enemata for severe diarrhœa: **Ice-bags** to abdomen, and subsequently **Ice-water** enemata for intestinal hæmorrhage.

TYPHUS FEVER.

Synopsis.—(Vol. 1889, p. 476.) To procure sleep, a warm bath and **Alcohol** are useful. Examine for retention of urine.

ULCERS.

Synopsis.—(Vol. 1889, p. 477.) For ulcers of emaciated, cachectic, and elderly people; R Benzoin Resin ℥ij, Ceræ Flavæ ℥iv, Adipis ℥iv, M. Ft. Ung. To be spread on lint and applied. For varicose ulcers, a compress or ointment of **Hazeline**, or **Liq. Ext. of Hamamelis** is best. For cases of indolent ulcer and syphilitic sores; R Sodium Iodide ℥ss, Tinct. Myrrhæ ℥j, Spiritus Rect. ℥ij, Aq. Dest. ℥vj. To make a solution of eight ounces for external application. **Silicate of Soda** for chronic ulcers (p. 65). **Mam-**

mea Americana as remedy for tropical sloughing ulcers (p. 52). Delphinium Consolida infusion used internally and externally for obstinate ulcers of feet due to syphilis or scrofula (p. 36).

URACHUS (Surgery of). *A. W. Mayo Robson, F.R.C.S.*

From time to time congenital fistulæ, due to a patent urachus, have been reported, and there are now several instances on record where an abdominal cyst, situated in front of the peritoneum and containing mucoid contents, has been evacuated, rendering it probable that the origin has been in a urachus only partially obliterated.

In the "Lancet" for April 26th, 1890, is the report of a case which came under the care of Dr. Pratt and Mr. Bond. The cyst in a man aged fifty-four had developed in eight or nine months without any apparent cause, the fluctuating tumour reaching from the pubes to three inches above the umbilicus, and laterally as far as vertical lines drawn through the anterior superior iliac spines. Aspiration yielded a gummy semi-transparent fluid, which only contained a trace of albumen, but a large quantity of mucine.

An incision of four inches was made midway between the umbilicus and pubes, when, after the linea alba had been divided, a thick membrane (the anterior wall of the cyst) was incised, and about eight quarts of fluid drawn off. On attempting to sponge out the inner surface of the cyst it bled freely. The cavity of the peritoneum was not opened. The cyst was drained with a glass tube, but when last seen there was still a fistula communicating with the cyst cavity, capable of holding half a pint of fluid.

Dr. De Gennaro ("Il Morgagni," No. 33, 1890) describes the case of a patient who was subject for several days to a muco-purulent discharge from the umbilicus. A fistulous tract was detected, and from it a calculus, the size of a broad bean, was discharged one morning, and the patient's troubles at once ceased. Three days before its discharge a very marked attack of vesical spasm occurred. The calculus was due to ammoniacal fermentation of the stagnant urine in a dilated part of the patent urachus, and subsequent development of phosphates. Dr. De Gennaro does not believe that the calculus was driven out of the bladder during the spasm into the open urachus.

URETER (Surgery of). *A. W. Mayo Robson, F.R.C.S.*

On Feb. 1, 1890, before the Clinical Society of London, Mr. G. Twynean, of Sydney, reported a case of a child aged eight, which had been suffering from abdominal pain and hæmaturia for sixteen months. After a failure in arriving at a diagnosis by ordinary means, he explored the kidneys and ureters through an incision in the left linea semilunaris. A calculus was discovered in the right ureter, two inches

from the bladder. The wound was closed, and healed well. Three weeks afterwards an operation was undertaken for the removal of the stone through an incision similar to that made for tying the common iliac artery. The ureter was found and easily isolated, and the stone was extracted with forceps through a linear incision. The wound in the ureter was stitched with fine silk, and a drainage tube was introduced to the bottom of the cavity, from which the urine soaked freely for three days. On the fifth day the urine ceased to flow from the wound, which then rapidly healed, the boy making a perfect recovery.

The noticeable points about the case were : (1,) The difficulty in diagnosis owing to the fact that the stone in the bottom of the right ureter caused pain in the left kidney ; (2,) In the novel method of removal of the stone situated so low down in the ureter.

In the "Brit. Med. Journ.," for Nov. 8, 1890, Mr. Arbuthnot Lane reports an interesting case of calculus impacted in the ureter for twenty years. After opening the abdomen in the linea-semilunaris, the calculus was forced upwards along the ureter to the crest of the ilium, and by means of a small incision in the side, the ureter was exposed and the stone removed. The aperture in the ureter was stitched up with a fine continuous silk suture, and the wound healed rapidly.

URETHRA (Electric Illumination of). *E. Hurry Fenwick, F.R.C.S.*

Dr. Franz Heuel, junr., being impressed with the circumscribed funnel view obtained about the end of Leiter's urethroscopic cannula has adapted a small rubber bulb and tube, in order to force air into the urethra whilst it is under examination. His instrument, which is almost similar in every respect to Géza von Antal's aero-urethroscope, is used for the pendulous urethra. The objection to the use of either instrument is that no manipulation, such as swabbing, dusting, curetting, or cauterizing, is possible without evacuating the air and removing the oblique glass diaphragm which closes the external end of the cannula. Dr. Heuel says, "By the employment of the endoscope the openings of the lacunæ, a drop of mucous or gleety discharge, the innumerable small blood-vessels, tumours, strictures, false passages, granulations, ulcerations, etc., may all be recognized and their characters and situations noted. Fragments of impacted or loose stone and foreign bodies may be dislodged without the aid of a forceps by distending the canal with air and using gravity to propel the substance towards the meatus, where it may readily be seized and removed. Dr. Oberländer contributes an able article upon the subject, and ridicules the idea that a sound knowledge of urethroscopy and cystoscopy can be obtained without great patience and much practice. Dr. Koll-

mann, of Leipzic, has been able to photograph the various parts of the urethra under electric light.

Stone in Urethra.—A case of urethral calculus attached to an old lithotomy scar is recorded by Dr. Pisani. The stone consisted of two portions. One part was imbedded in the scar tissue, and the other was moulded in the urethra. It was removed by lateral lithotomy incision.

REFERENCES.—Geza von Antal, "Pathologie der Harnröhre," p. 50., 1888; Franz Heuel, jun., "New York Med. Jour.," February 22, 1890; Oberländer, "International Centralblatt Harn. Organe.," Bd. 11, Heft. 5; Kollmann, "Die Photographie des Harnröhren," Ibid.; Pisani, "Brit. Med. Jour.," p. 661, part i., 1890.

URETHRITIS.

Synopsis.—(Vol. 1890, p. 494.) In acute cases, injection of **Bichloride of Mercury** 1 in 40,000, in chronic cases 1 in 10,000 used with Kiefer's two-way tube one to two quarts of solution being used at ordinary temperature, but after this a saturated solution of **Boric Acid** or **Potass Permang.**, gr. $\frac{1}{8}$ or $\frac{1}{4}$ to ʒj, or **Alum** and **Carbolic Acid** are usually required; deep irrigation with **Hot Water; Rhatany, Sulphate of Zinc, Belladonna** alone or with **Chloride of Zinc**, and **Chloride of Zinc** alone have been used as bougies; **Thallin** in Christy's **Bougies** failed; **Permanganate of Zinc**, gr. j to ʒviij **Distilled Water**, is useful; **Sulphates of Zinc, Alumina, Copper**, and **Iron** are more useful in later stages of gleet. The four sulphates may be combined, ℞ Sulphate of Zinc 30 to 40 grains, Alum 30 to 40 grains, Sulphate of Iron 20 grains, Sulphate of Copper 2 grains, Water 8 ounces. **Nitrate of Silver Solution**, 5 to 25 grains to ʒviij, injecting 5 to 10 minims; **Cocaine**, 5% solution may be thrown in before the astringent if much pain be present, and a 10% solution prevents the scalding pain during micturition in early stages. For retention of urine due to light chronic urethral stricture after rapid dilatation or internal urethrotomy, empty bladder with a large catheter, and wash out with **Sublimate Solution**, 1 in 5000, leaving 3 or 4 ounces of this fluid behind. Before putting patient to bed, distend urethra with **Carbolic Oil**, 1 to 20, which is well rubbed in at site of operation, and give **Quinine**, grs. v, every four hours; **Boracic Acid** may be used instead of the above antiseptics.

URIC ACID DIATHESIS.

Synopsis.—(Vol. 1889, p. 61.) **Pichi Fl. Ext.**, ♏xv ʒj, t.d.

URINE, EXAMINATION AND PATHOLOGY OF.

Robert Saundby, M.D., F.R.C.P.

Albumen.—Trichloracetic acid has been proposed as a test for Albumen. This substance is obtained by the action of chlorine gas upon acetic acid, three atoms of hydrogen being replaced by chlorine. The compound is represented by the formula $CCl_3CO{\cdot}OH$. It is a crystalline body, very soluble in water, and forms salts analogous to the acetates. The test may be used in the solid form or in solution. In the latter case it can be used saturated or fairly concentrated, and when poured

upon the urine it forms a characteristic ring, like that obtained by means of nitric acid, but without any coloration. It may give rise to a cloud by precipitating urates if these are present in large amounts.

The practical value of this test for albumen has been further investigated by D. M. Reese, who fully confirms the statement that trichloracetic acid precipitates not only the albumen ordinarily found in urine, but also an albumen occasionally present, which is dissolved by acetic acid. In fourteen out of eighty-seven different specimens of urine he obtained a precipitate with trichloracetic acid, and not with nitric or picric acids, or heat and acetic acid. What gives his paper special interest is that in eleven of these fourteen cases granular, epithelial, or hyaline casts were found, and in three of these eleven cases the necropsy showed distinct changes in the kidneys. He concludes that trichloracetic acid is a most delicate test for albumen in urine, prompt in action, easily applied, and worthy of extended use.

Sugar.—Dr. C. W. Purdy, of Chicago, recommends the following as a more stable compound than ordinary Fehling's solution :—

Cupric sulphate, pure	...	...	...	4·15 grammes ;
Caustic potash, pure	...	...	...	20·4 „
Strong ammonia (sp. gr. 0·90)	...	...	350	c. c. ;
Pure glycerin	...	...	...	50 c. c. ;
Distilled water	...	...	to	1 litre.

Prepare by dissolving the copper sulphate in part of the water and adding the glycerin. In another portion of the water dissolve the caustic potash. Mix the two solutions and add the ammonia. Finally, with distilled water bring the volume of the whole to one litre and filter.

Thus prepared, 30 c. c. (f℥j) of the solution is reduced by one quarter of a grain of grape sugar upon boiling.

In addition to this, he has adapted the same formula to an approximate method, which will be found very simple and convenient for general use, as follows : First dilute the urine to be tested with an equal volume of water. Next measure accurately one drachm of the test solution into an ordinary test tube and heat to boiling over a spirit lamp. With a minim pipette, or one the point of which is sufficiently large to drop minims, discharge the diluted urine, drop by drop, into the boiling test solution until the blue colour completely disappears. If one minim of the diluted urine discharges the blue colour of the test, the urine contains thirty grains of sugar to the ounce or over. If it requires two drops to discharge the blue colour, the urine contains between fifteen and thirty grains to the ounce. If it takes three drops to eliminate the blue there are between ten and fifteen grains to the ounce. If it requires four drops, there are between seven and a half

and ten grains to the ounce. If five drops, there are between six and seven grains to the ounce. If six drops are required, there are between five and six grains to the ounce. If eight drops are required, there are between four and five grains to the ounce. If ten drops are required, there are from three to four grains to the ounce. If it takes fifteen drops, there are between two and three grains to the ounce. If the blue colour is not discharged by fifteen drops, the urine contains less than two grains of sugar to the ounce.

In testing, the first five drops of urine should be very slowly added —about five or six seconds elapsing between each two drops, during which time the solution should be kept boiling. After five drops have been added the solution may be kept boiling and the diluted urine added drop by drop continuously but slowly until the blue colour completely vanishes, or until fifteen minims have been added.

The relations of the test to the number of minims required may be seen at a glance in the table below.

One drachm of the test solution, if reduced by

1 minim	of diluted urine,	30 grains	of sugar or over ;
2 minims	„	15 to 30 grains	to the ounce ;
3 „	„	10 to 15 „	„
4 „	„	7½ to 10 „	„
5 „	„	6 to 7½ „	„
6 „	„	5 to 6 „	„
8 „	„	4 to 5 „	„
10 „	„	3 to 4 „	„
15 „	„	2 to 3 „	„

Safranin has recently been recommended by Grismer as an admirable sugar test : sixteen drops of urine are diluted with five times the volume of the safranin solution (1 to 1000), and boiled with thirty drops of caustic potash solution. If the urine contains sugar the solution is decolorized. This test possesses the advantage over Fehling's test, in that it is not decolorized by uric acid, creatinin, chloral, chloroform, peroxide of hydrogen, or salts of hydroxylamin. On the other hand, the solution of safranin and urine is completely decolorized by albumen, but only after very prolonged contact. Sometimes perfectly normal urine appears to decolorize safranin, but if this specimen of urine is subjected to the fermentation test it will always be found to contain a minute quantity of sugar.

Ashdown has studied the presence of a substance in the urine which is not sugar, yet reduces copper freely. This substance is glycuronic acid, and may be present in healthy persons. It may be distinguished by the fermentation test.

Urea.—Cruise has got Messrs. Southall Bros. to modify Doremus's ureameter so as to make the scale show the number of grains per ounce instead of the percentage of urea.

The Rosenbach Reaction.—Rosenbach has drawn attention to a Burgundy red colour developed in certain urines on boiling with nitric acid. He thinks it is of grave prognostic significance. He has found it in various intestinal affections, stenosis, obstruction, ileus, severe diarrhœa, cancer, in phthisis, marasmus.

The Diazo-Reaction.—The method of testing is very simple, the two special solutions only being required, a concentrated solution of sulphanilic acid in water and a solution of nitrite of sodium of the strength of 1 in 200. The actual test solution is prepared immediately before use by mixing two hundred parts of the sulphanilic acid solution with ten of pure hydrochloric acid and six of nitrite of sodium solution. This mixture is added to an equal volume of the urine, and sufficient ammonia added to render the whole alkaline. A bright or carmine red coloration denotes the diazo-reaction. After from twelve to thirty-six hours a deposit occurs, the upper part of which is green or black.

Rutimeyer, who has made between two and three thousand trials of the urine from two hundred and sixty patients, declares his belief that it is a very useful guide both in diagnosis and prognosis, being especially valuable in phthisis and typhoid fever. In phthisis he regards it as denoting absorption of caseous matter, and when it is persistent as implying rapid mischief and an early and fatal termination. In cases of general miliary tuberculosis it was always obtained. The number of typhoid cases which were examined was one thousand one hundred and thirty, of which eighty-seven were fatal. The presence of the reaction is very constant, and it can generally be obtained early. It does not seem to be present in pyrexial intestinal catarrh. If the reaction is not obtained during the first or second week the case, if one of typhoid at all, must be a very slight one. It cannot, however, be affirmed that a well-marked and constant diazo-reaction is any sign of a fatal termination, as with phthisis. The reaction is never given by the urine of healthy persons, and was not observed in hysteria, myelitis, hepatitis, diabetes, cystitis, pyelonephritis, benign ovarian cysts, cholelithiasis with jaundice, gastro-abdominal catarrh with fever, or in a number of surgical diseases. It was occasionally present in cancer of the stomach and œsophagus, chronic nephritis, caries of bone, cold abscesses, pyæmia, scarlatina, pleurisy with serous effusion, tubercular meningitis, and heart diseases. It was more frequently obtained in croupous pneumonia, actinomycosis of the lung, and malignant diseases of the peritoneum.

REFERENCES.—"John Hopkins Hospital Bulletin" No. 3.; "Wiener Med. Blatt.," July 25, 1889; Ashdown, "Brit. Med. Jour.," 1890, vol. i., p. 169; Rosenbach, "Berl. Klin. Woch.," 1, 22 and 23, 1889; "Lancet," August 23, 1890; "New York Med. Jour.," March, 1890.

URINE (Non-retention of in Women).

Synopsis.—(Vol. 1890, p. 503.) If caused by contracted bladder, gradual dilatation by means of **Warm Water** is useful, gradually increasing the quantity at each sitting until 15 to 20 ounces can be held; twisting the urethra; **Belladonna** internally; **Rhus Aromat.** (5% tincture from the bark) in doses of ♏v to xx is recommended.

URINE (Retention of). *E. Hurry Fenwick, F.R.C.S.*

Mr. Davis recommends the use of an instrument which is a combination of a whip bougie and catheter, the eye being placed at the middle. The first half or bougie portion is solid, and very gradually increases in diameter, passing over four sizes, English scale, from its olive point to the eye, thus forming a wedge to open up the stricture for the passage of the second half, or catheter portion, which is uniform in size throughout, and therefore follows the bougie easily.

URTICARIA. *W. Allan Jamieson, M.D.*

The use of medicines is somewhat limited by the fact that an attack of acute urticaria lasts only a short time; on the other hand we have no remedies that have any effect either on its intensity or in changing its course. We can only act on the symptoms, and it is principally the itching that demands our attention. This troublesome sensation is sometimes so violent as to prevent sleep. We, therefore, try to procure sleep by artificial means, and for this purpose make use of ordinary sleeping remedies. But we are still called upon to furnish some relief to the itching. We have, however, means of acting permanently on it. The use of applications of a 2 per cent. solution of **Carbolic Acid** is the best, which are allowed to remain on for some time. But these only relieve the itching from ten to fifteen minutes, then to return with its former intensity. The simple action of cold on the affected side gives some relief. A very elegant preparation is the **Aqua Laurocerasi** in **Almond Emulsion**. A popular remedy, one that is much used, and that you can occasionally employ, is **Lime Juice** or **Slices of Lime** or **Lemon** laid directly on. But even with these means, the relief obtained is only for a few minutes. The use of warm baths is decidedly unadvisable, as they will only cause the rash to come out with redoubled intensity. As a hypnotic I place **Sulphonal** in the front rank.

At the Congress of Therapeutists and Pharmacologists held recently in Paris, Dr. Riffat, of Salonica, read a paper directing attention to the

efficacy of **Tincture of Strophanthus** in the treatment of acute and chronic urticaria. In ten cases which had resisted other remedies tincture of strophanthus was found of considerable value. The tincture was administered in doses of 15 to 20 drops during the twenty four hours. In acute urticaria a single dose has almost always proved sufficient to cause the disappearance of the rash as well as of the itching. Dr. Riffat believes that strophanthus gives relief in this disease either by some favourable action on the digestive organs, or by removing from the blood the compounds which give rise to the irritation of the nerves supplying the skin.

REFERENCES.—"Med. Press and Circ.," p. 292, Mar. 19, 1890; "Pharm. Jour.," p. 118, Aug. 10, 1889.

Synopsis.—(Vol. 1889, p. 483.) When acute use an emetic, *e. g.*, **Zinc Sulphate** or **Mustard**, or **Apomorphia** subcutaneously. If some time has elapsed since the offending food was swallowed, use a brisk purgative, *e.g.*, **Sod. Sulph., Magnes. Sulph.**, or **Rochelle Salts.** In the subacute form ℞ Magnes. Sulph. ℥ss, Ferri Sulph. gr. xij, Ac. Sulph. Dil. ℥j, Aq. ad ℥iij, Sig. ℥ij well diluted, thrice daily. In gouty cases, ℞ Tinct. Aconit. Rad. ♏xvj, Vin. Colchic. Rad. ℥ijss, Pot. Acetat. ℥ss, Aq. ℥iijss, Sig. ℥ij t.d. in water. A slightly warm bath containing ℥ij **Pot. Sulphurat.** in xxx gallons of water may be used and the following lotion: ℞ Ac. Carbolici ℥j, Glycerini Pur. ℥ij, Sp. Vin. Rect. ℥iij, Aq. Camphoræ ℥v, M. If eruption recur constantly use **Tinct. Belladonnæ** in full and increasing doses, or better still, **Atrop. Sulph.** gr. $\frac{1}{100}$, and cautiously increased, as subcutaneous injection daily.

(Vol. 1890, p. 504.) In chronic cases, **Arsenic** and **Alkalies**, when due to digestive disturbance; in chronic or recurrent cases due to nervous causes, **Antipyrin**, gr. viij daily, a few hours before the usual time of attack.

UTERINE APPENDAGES (Diseases of).

Synopsis.—(Vol. 1890, p. 507.) For ovarian congestion, prolapse, neuralgia, and chronic ovaritis associated with subinvolution of uterus after parturition, the prolonged administration of **Ergot** is useful; other cases are greatly relieved and sometimes cured by **Hydrastis** and the **Bromides**, and the same remedies are valuable in mild cases of gonorrhœal inflammation. Ovarian nausea and vomiting are very amenable to intra-uterine **Galvanism**, the negative pole being used as the uterine electrode with a low current; pain is often relieved also by introducing the positive pole into the uterus, and the internal use of **Belladonna**; **Swedish Massage**; general application of **Electricity**; **Cod Liver Oil** and open-air life for cases due to strumous, gouty or other depraved constitutional conditions.

UTERUS (Diseases of). *R. Milne Murray, M.B., F.R.C.P.*

Endometritis.—The treatment of chronic muco-purulent and hæmorrhagic endometritis by means of pencils of chloride of zinc introduced into the cavity has been followed by excellent results in the hands of Pollailon, Dumontpallier, Bock and others.

The sticks are made of 1 part of zinc chloride with 2 parts of flour and enough water to enable the mass to be kneaded into proper form

The length of stick used should correspond to the length of the uterus treated, and should be not more than a quarter of an inch in diameter. The vagina is irrigated with corrosive solution, and a pencil of the proper length introduced. A plug of absorbent cotton is placed in the posterior cul-de-sac, and retained *in situ* by means of some iodoform gauze. The patient, as a rule, experiences but little pain, but, if severe, it should be overcome by means of a subcutaneous injection of **Morphine.**

The action of the chloride of zinc is rapid, and from the fourth to the twelfth day the eschar comes away, and the results of the operation are generally very favourable. The pain is slight, and no febrile reaction is observed. To avoid any complication, the patients are ordered to keep to their bed three days, and lie on the sofa five or six days, or until the slough becomes detached. At the end of three weeks, a complete cure is generally obtained. Out of forty cases treated by M. Pollailon, thirty-eight were cured. The menses are not interfered with by the caustic. As to the indications and counter-indications, all chronic endometritis with purulent secretions, all infectious or hæmorrhagic endometritis, and even all uterine hæmorrhages, except those provoked by confinements or large tumours, are benefited by this treatment. However, in the case of young women, this cauterization should be used with care. It was said that it caused sterility, but every young woman affected with chronic endometritis is sterile, and remains so unless treated. Acute metritis and ovaritis would be counter-indications to the employment of chloride of zinc.

Stratz has investigated the influence of solutions of chloride of zinc on cases of cervical catarrh, and finds that mild cases yield to these applications, but it is not to be regarded as a specific, as has been claimed by Bröse and others. He employed 10 per cent. solutions daily in some, in others 50 per cent. solutions every fifth day.

Drs. Polk and Gill Wylie have both urged the importance of **Drainage of the Uterus** in acute and chronic endometritis. Dr. Polk effects this first by dilatation by means of steel or other dilators, followed by the introduction of a strip of iodoform gauze into the uterus up to the fundus. This strip is changed daily.

Dr. Wylie employs **Dilatation** only, or in some cases accompanied by curetting. As the result of his experience he draws the following conclusions: (1,) Perfect drainage of the uterine canal is of the utmost importance in all diseases of the endometrium; (2,) It has been practically overlooked by gynecologists and its importance disregarded in treatment; (3,) That it can best be secured by free dilatation by means of a steel dilator used once a week, not too near menstruation,

and supplemented by hard-rubber drainage plugs, curetting and intra-uterine applications if indicated; (4,) That in many cases to-day being treated by the use of pessaries, and called cases of anteflexion, retroversion and retroflexion, all symptoms can be permanently cured in a few weeks by the use of the dilator, the drainage plug, curette, and simple intra-uterine applications properly made; (5,) That sponge or other tents left in the os, and obstructing drainage for more than a few hours, should never be used, for they not only obstruct drainage, but are liable to cause uterine contractions, and force the contents of the uterus out through the Fallopian tubes, and cause local peritonitis, etc. By the use of a colpeurynter to soften the os uteri, it can be rapidly stretched by dilators or Barnes' rubber bags without interfering with drainage; (6,) That the same objections are applicable to vaginal or uterine tampons, so frequently used to stop uterine hæmorrhage, as have been made to the sponge tent, and that by the proper use of hot intra-uterine douches of 120° after dilatation, or by tying or compressing with forceps the circular or other larger arteries, with very rare exceptions all uterine hæmorrhages can be controlled; and if a tampon is used, it should be left in place only a few hours, and of course be prepared by being soaked and squeezed out in a solution of bichloride of mercury or some reliable antiseptic; (7,) That, with few exceptions, the many cases of chronic uterine catarrh treated by the use of hot douches, rest, and iodine to the vaginal vault, can be readily cured by (*a*,) improving the circulation of the pelvis by means of boroglyceride and alum solution applied twice a week on long, firmly rolled cotton pledgets and by (*b*,) dilating with a steel dilator about two or three times a month, and properly making simple carbolic acid intra-uterine applications, and, if indicated, the use of the curette and hard-rubber drainage plug; (8,) That the same treatment will give better results in those obstinate cases of chronic uterine disease in which the use of chromic acid, nitric acid and other strong caustics, or the actual or galvanic cautery have been resorted to.

Backward Displacements of the Uterus.—Extended experience of Alexander's operation has shown that it is a difficult operation in many cases, and that in others when apparently performed in a perfectly satisfactory manner its results are not permanent, nor satisfactory. Most authorities are agreed that it is contra-indicated in cases where the uterus is adherent, and consequently a considerable number of cases of retroversion and flexion are beyond its scope. Many attempts have recently been made towards devising an operative method which is simpler, applicable to cases of adherent uterus and more permanent in its effects.

The methods may be divided into two groups : (1,) Those in which the procedure requires an abdominal incision—hysterorrhaphy and its modifications ; (2,) Those in which the procedure is conducted per vaginam.

The first of these, it may be noted, is that due to Frommel, and has for its object the shortening of the utero-sacral ligaments, thus dragging the cervix backwards and throwing the uterus forwards. The abdominal section is made in Trendelenburg's posture, and, after separating the adhesions and holding the uterus well forward, the posterior peritoneal reflexions are surrounded with a suture near their uterine insertion and fastened to the lateral pelvic peritoneum. The effect is that instead of the bands going more or less in a straight direction towards the rectum, they are caused to deviate at a right angle, thus practically shortening them and throwing the body forward. In the case reported the operation was not successful, the failure being due, according to the operator, to the suture material used.

Another method for which the author claims satisfactory results has been described by Boldt, and may be termed ventro-fixation. The procedure, as described by the author, is as follows : "After breaking up the adhesions which I have seen so dense that the use of ligature and scissors was required to sever them, a silkworm-gut suture is threaded in a coarse needle for the parietes ; after these have been pierced, a fine curved needle without cutting edges is exchanged for the coarse needle, and the suture passed beneath the uterine serosa at the fundus, taking in about one inch of surface ; then the exchange is again made for the coarse needle and the opposite parietal wall pierced. The rest of the sutures to close the abdominal incision are placed *in situ*, and a sponge on a handle is introduced into the cul-de-sac to ascertain the amount of bleeding from the torn adhesions ; we must also make sure that there are no intestines in front of the uterus. Everything being in order, the suspending suture is tied, and then the rest of the abdominal incision closed. The smallest pessary suitable for the respective case should at once be inserted to take off the strain of the uterus on the suture. The supporter must be worn for a variable period of time. After the lapse of one week the silkworm suture is cut, to prevent burying into the integuments, but it is not entirely removed for two weeks."

In certain cases Boldt employs what he terms "utero-fixation," in which he denudes a portion of the serous uterine surfaces for the purpose of obtaining an adhesion to the abdominal wall.

A similar operation has been performed six times by C. G. Leopold. These cases were complicated by chronic ovaritis, salpingitis, myoma

of fundus, adhesions, etc. The following is the description of the operation as performed by him : The operation should be simple and trustworthy. The most important preparatory work consists in sundering the uterine adhesions, which, though often sparse and thin, are now and then very numerous and of cartilaginous consistence ; the frailer ones may be best separated by the index finger. Bleeding seldom follows, if carefully done ; should it occur and continue, the part may be tamponed with a roll of iodoform gauze, which may remain in position till the close of the operation. When the adhesions are numerous and firm the greatest caution is necessary ; force should not be employed ; what the fingers cannot separate should be cut with a knife or scissors ; the sutures are so made that from one to three deep abdominal sutures pass through the fundus uteri and draw it to the abdominal wall. The first enters about one-half to one centimètre anteriorly to the tubal opening ; the second between it and the third, one-half to one centimètre behind it, going transversely under the serous coat of the uterus and about two to three millimètres deep through the upper muscular layer. The three sutures should be long, so as to be readily differentiated later on. The abdominal sutures are removed from eight to twelve days later, the three fixing the uterus remaining until the fourteenth or eighteenth day ; by this time the fundus is firmly adherent to the abdominal wall. In order to render the latter more certain, the serous surface of the uterus is scooped off at the point of apposition to the abdominal wall. The author finds this almost essential.

None of the cases were required to wear a pessary after they had recovered ; there was no disturbance of menstruation. The author concludes that the operation is still far from the ideal. The position of the organ is a forced one. In cases of pure retroflexion, and after the removal of tumours which have for years caused retrodeviation of the uterus, the operation will for some time to come have to suffice. But in the more frequent cases of chronic oöphoritis and salpingitis with retroflexio-uteri, which require complete castration with ventral fixation, it becomes a question whether it would not be better to remove the uterus and ovaries entire per vaginam ; the uterus after castration is useless.

A. P. Dudley's operation consists of shortening the round ligaments and so dragging the uterus forward, but doing so at the uterine not at the inguinal end.

His procedure is as follows : He freshens a portion of the anterior uterine surface to within three-quarters of an inch of the bladder junction. He then dissects out the round ligaments and, removing a

portion of peritoneum from each one, he sutures them to the freshened portions on the anterior surface of the uterus. The result in the case operated on was satisfactory.

All these methods involving an incision into the abdomen are attended by an amount of risk, which it is the purpose of the second group of operations to avoid.

Schücking has described an operation which he has performed sixty-two times, with what he regards as very satisfactory results. It consists in producing an artificial anteflexion in place of the retroflexion, and is performed as follows: A specially curved needle carrying a stout silken thread is carried into the uterus and pushed through the anterior wall. Forcible downward and forward traction of the uterus is made, and the needle carried through the tissues between the bladder and uterus until it enters the vagina—the thread is caught and the needle withdrawn. The two ends are tied, and the fundus and cervix are thus permanently approximated in front. A Hodge or Thomas pessary is introduced and the suture left in until the eighth week.

It is obvious that apart from other objections there is considerable danger of wounding the bladder, and indeed, in the cases recorded vesical hæmorrhage is not uncommon. In one case operated on by Schücking, Zweifel found that a permanent vesico-vaginal fistula had been established. To avoid this risk Zweifel has devised a modification of the operation which may be thus described: By means of a Paquelin's cautery he makes a transverse incision in the anterior vaginal fornix. The cervix is then pulled down to the right while by means of a catheter the bladder is pushed up to the left. The left forefinger is employed to keep the bladder out of the way, while a special needle carrying a thin thread is passed through the uterus and out through the anterior vaginal vault. The needle is then withdrawn, and through the loop of fine silk left, a stout thread is passed. By means of the fine loop the latter is dragged back through the course of the former, and thus emerges from the os externum. This end is secured by a glass bead or button, and traction on the other throws the cervix backward while the fundus is dragged down to the incision. The latter is closed by sutures, and the anterior end of the thread also secured by a button or bead, such as was used for the posterior end. The vagina is douched daily and the ligature tightened from time to time. At the end of six weeks it is removed. The results in six cases have been satisfactory.

While these operations avoid the risk of an abdominal incision, they are by no means free from danger. They are open to the criticism

that they substitute one abnormal position for another, and the occurrence of secondary vesical complications might be anticipated, apart altogether from direct injury during the operation. They have still to stand the test of pregnancy. Sufficient time has not elapsed to enable us to determine how far the results are permanent.

REFERENCES.—"Therap. Gaz.," Sept. 15, 1889; "Rev. de Therap.," 1889; "Gaz. des Hôpitaux," Oct. 22, 1889; "Amer. Jour. of Obstet.," Jan., 1890; Ibid., June, 1890; "Central. f. Gyn.," F b. 8, 1890; Ibid., Feb. 22, 1890; "Sammlung Klin. Vort.," No. 333; "Central. f. Gyn.," Feb. 22, 1890; "Central. Blatt. f. Gyn.," Feb. 16, 1890.

Synopsis.—(Vol. 1890, p. 511.) **Ergot, Hydrastis,** and the **Bromides** to restrain hæmorrhage due to myoma, also the use of the curette, which has been followed in some cases by intra-uterine injection of **Iodine** with Braune's syringe; for the pain of myoma, infusion of **Cotton-root Bark,** 3 teaspoonfuls of the powder to a pint of water, this being divided into three doses for one day. Apostoli's **Electrical Treatment** and **Removal of Appendages** for myoma, the latter being the more satisfactory; for chronic endometritis, packing the uterine cavity with **Iodoform Gauze** after dilatation; use of the curette; where sterility is due to chronic cervical endometritis, painting the cervical canal with **Perchloride of Iron,** one part to three of **Glycerine.**

VERMIFORM APPENDIX (Surgery of).

A. W. Mayo Robson, F.R.C.S

Although the term appendicitis has been objected to by several English writers of authority, the vermiform appendix seems to be the proper heading under which to discuss the form of peritonitis, which so frequently occurs in the region of the cæcum; and more extended experience both clinical, operative, and post mortem, leads one to see that the cause of the trouble is nearly always in the vermiform appendix. The names typhlitis, perityphlitis, paratyphlitis, and appendicitis, so far as treatment is concerned may be all considered as forms of local peritonitis, occurring in the region of the cæcum, and although undoubtedly there are some cases of abnormal or other forms of ulceration of the cæcum, by far the greater number (by one authority 95 per cent.) have their origin in the vermiform appendix. Undoubtedly many of the milder forms of typhlitis, resolve under medical treatment, and even when pus has formed, in quite a number of cases, it makes its way to the surface and bursts through the abdominal wall. Dr. Bull has shown that in sixty-seven cases of abscess the pus escaped in twenty-eight instances through the parietes, and in only eight did it burst into the peritoneal cavity. Many surgeons of eminence, however, and notably American surgeons, among whom may be mentioned Dr. Chas. McBurney, Dr. W. T. Bull, Dr. Sands, and Dr. Senn, are in favour of early interference; the last-named surgeon in a paper pub-

lished in "The Jour. of the Amer. Med. Assoc., Nov. 2, 1889, saying that: (1,) All cases of catarrhal and ulcerative appendicitis should be treated by laparotomy and excision of the appendix as soon as the lesion can be recognized; (2,) Excision of the appendix in cases of simple uncomplicated appendicitis is one of the easiest and safest of all intra-abdominal operations: (3,) Excision of the appendix in cases of appendicitis before perforation has occurred is both a curative and prophylactic measure; (4,) The most constant and reliable symptoms indicating the existence of appendicitis are recurring pains and circumscribed tenderness in the region of the appendix; (5,) All operations on the appendix should be done through a straight incision parallel to and directly over the cæcum; (6,) The stump after excision of the appendix should be carefully disinfected, iodoformized, and covered with peritoneum by suturing the serous surface of the cæcum on each side over it with a number of Lembert stitches; (7,) The abdominal incision should be closed by two rows of sutures, the first embracing the peritoneum, and the second the remaining structures of the margins of the wound; (8,) Drainage in such cases is unnecessary and should be dispensed with.

Dr. Sononberg read a paper before the Surgical Society of Berlin, recommending immediate operative interference by incising the abdominal wall, until the peritoneum is exposed, and through the undivided peritoneum, palpating the inflammatory area, the operation being completed at the time or subsequently according to the condition found, the abdominal wound being plugged with iodoform gauze, which is removed daily for the purpose of examining the part, and in order to evacuate pus if found. In the discussion, Hahn, Volkmann, and Bergmann agreed as to the desirability of the two parts of the operation being undertaken at different times.

Mr. Fred. Treves divides typhlitis into three classes: (*a*,) The mild form; the commonest, which usually ends in resolution, and is amenable to simple medical treatment, rest, opium, and diet; this usually depends on peritonitis due to stercoral ulcer; (*b*,) A severer form ending in suppuration and nearly always depending on some trouble commencing in the appendix, it being in this form of typhlitis that a prompt and definite surgical treatment is indicated; (*c*,) Relapsing typhlitis due to appendix trouble. In these cases the operation should not be performed until all inflammatory and other symptoms have quite subsided. He advises that: (1,) The incision should be made obliquely from above downwards and inwards over the cæcal region, its lower extremity ending just external to the epigastric artery. The incision should not be made directly over the appendix or over the dullest region. If it be so placed a number of adhesions will probably be en-

countered, and the demonstration of the peritoneal cavity might be difficult. The cæcum or the appendix might be actually adherent to the anterior abdominal wall. The incising of the peritoneum should, therefore, be conducted with the very greatest care. It is well that the parietal cut should open the abdomen at a point just beyond the diseased area, and where no adhesions exist; (2,) When the appendix and cæcum are exposed, the area of the operation should be cut off from the general abdominal cavity by sponges. If this plugging with sponges be well carried out, no blood should enter the peritoneal space; (3,) All adhesions should be divided by cutting; none should be "broken down." The latter measure is apt to tear the bowel, or, at least, to bare it of peritoneum; (4,) The appendix should be lightly clamped close to the cæcum, and should be divided about half an inch from that intestine; it should not be secured by a simple ligature. The mucous membrane should be united by many fine sutures, or by a continuous suture; then the divided outer walls of the process should be brought together by a second row of sutures; it is practically impossible to bring the serous coats together. To still further secure the orifice, the stump of the appendix might be lightly attached to any adjacent surface of peritoneum; (5,) The abdominal wound should be closed; no drain is required. During the progress of the operation any adhesions likely to give rise to trouble might be dealt with; this more especially applies to adherent omentum, or to adhesions binding down coils of small intestine. If the appendix be closely adherent to the ureter, or to a coil of the ileum, or be found deeply attached in the pelvis, its removal may be attended with very considerable difficulties. The management of such a case must be left to the judgment of the individual surgeon.

Dr. McBurney, in an extremely important paper, read before the New York Surgical Society, and published in the "New York Medical Journal," for Dec. 21, 1889, doubts the safety of the advice given by several recent writers to watch the symptoms and to be guided by their violence in determining the method of treatment, as frequently the symptoms do not determine the severity of the disease.

Abdominal pain more or less severe, tenderness on pressure about two inches from the anterior superior spine of the ileum, in a line between it and the umbilicus, fever more or less severe, rigidity in the abdominal muscles, tympanites of varying degree, a tumour of greater or less size, and pain on extending the right thigh, forms a group of symptoms clearly indicative of appendicitis. Although these symptoms render a correct diagnosis easy, the diagnosis as to the stage the disease has reached, that is, as to whether pus has formed or not, whether

the appendix has perforated or not, or even whether general peritonitis may exist, is often very difficult.

With regard to the use of the exploring syringe, Dr. McBurney believes that it will become less frequent as we know more of the affection, and he condemns it altogether in the beginning of the illness.

After detailing the history of eight cases of appendicitis operated on at the early stage of the acute inflammatory process, he remarks: "Every case of appendicitis, so far as the cleverest observer can tell, will have to pass by very many dangerous obstacles before reaching the smooth water of a comfortable abscess. For my part I would endeavour to ensure safety early, before reaching the rapids, rather than trust to finding my way with my eyes blindfolded through the dangerous passage."

Dr. McBurney considers that great abdominal distension should if possible be relieved before operating, and unusual obesity he regards as a sign for a more expectant method of treatment.

Dr. F. S. Dennis discourages the removal of the appendix in cases of recurrent appendicitis, and argues that in the great majority of cases the disease does not recur. In the 11 per cent. in which it does recur, and even in the majority of these, the termination of the disease is in resolution. In preference to the removal of the appendix in the intervals of attacks he recommends early incision, and if necessary excision of the appendix at an early stage, the second or third day of the actual attack.

REFERENCES.—"Lancet," May 3, 1890; Ibid., May 3, 1890; "New York Med. Jour.," Jan. 25, 1890; "Annals of Surgery," March, 1890.

VERRUCA.

Synopsis.—(Vol. 1889, p. 506.) Continued doses of **Sulphate of Magnesia**, gr. j to iij for children, ʒss t.d. for adults. *Locally:* **Salicylic Acid Paste**, followed by a saturated solution of **Chromic Acid**. Unna's preparation containing x grs. **Arsenic**, and v grs. **Corrosive Sublimate** to the ʒj, applied on gauze and kept on night and day.

VITREOUS (Opacity of). *W. Lang, F.R.C.S.*

Where the opacities are so dense that the eye is practically blind and all internal treatment has failed to alter the condition, Mr. Vernon Ford has had good results after repeated evacuations of portions of opaque fluid. He incises the sclerotic and withdraws a part of the vitreous by means of a syringe with a nozzle of large calibre.

VOLVULUS. (See "Intestinal Surgery.")

VOMITING of Pregnancy. (See also "Labour.")

Synopsis.—(Vol. 1889, p. 507.) **Paraldehyde**, gtt. xl, **Simple Elixir**, ʒj, M. A teaspoonful given in water and repeated in half an hour if necessary, useful in

vomiting from ovarian irritability, pregnancy, and the nausea of migraine. Oxalate of Cerium, grs. j to iij in functional sickness and sometimes in sea sickness. Tinct. Iodi, gtt. v in sweetened water for vomiting during and after labour (p. 49).

WORMS.

Synopsis.—(Vol. 1889, p. 518.) Santonin for round worms, the least soluble salts being best; Turpentine, ♏v to x t.d. in mucilage; Chenopodium Oil. To clear out thread worms give one or two good doses of Rochelle Salts, followed by enemata of ice-water, lime-water, or infusion of Quassia. To remove tape worm first give a dose of Castor Oil, then feed for a day on onions, garlic and salt herring to nauseate the worm, next use Oil of Male Fern. Delphinium Staphisagria Seeds (p. 37). Embelia Ribes Fruit in powder, ʒj to iv for tæniæ (p. 38). Santoninoxime, gr. j for a child, gr. iv for adult, in ascarides (p. 64).

WOUNDS. (See "Abdominal Injuries," &c.)

Synopsis.—(Vol. 1889, p. 63.) Quebracho Fl, Ext. painted on, forms a useful coating.

WRY NECK. (See "Torticollis.")

Synopsis.—(Vol. 1889, p. 519.) Solanin, grs. j to ij, gave good results in one case.

XANTHELASMA.

Synopsis.—(Vol. 1890, p. 528.) Application of a layer of Collodion, containing 10% Sublimate, which causes a superficial eschar; use of Galvano-cautery.

XANTHOMA.

Synopsis.—(Vol. 1889, p. 520.) Phosphorus administered internally, followed by Turpentine or Ac. Nitro-Muriatic given first and followed by Arsenic; but removal by the knife is probably best.

YELLOW FEVER.

Synopsis.—(Vol. 1889, p. 520.) ℞ Sod. Bicarb., grammes x, Hyd. Chlor. Corrosiv., centigrammes ij, Aq. Pur. Litre j, M. Sig. grammes 1 every hour given ice cold, to check proliferation of germs. Benzoate of Sodium may be added to the formula for its laxative action, and in severe cases the amount of bichloride may be increased to v centigrammes per litre.

PART IV.—MISCELLANEOUS.

Sanitary Science.

BY D. S. DAVIES, M.B. Lond., D.P.H. Cantab.,
Medical Officer of Health for Bristol, etc.

(ARTICLE II.*)

PUBLIC HEALTH LEGISLATION.

IT is provided in the Local Government (England and Wales) Act of 1888 (Sec. 18) that :—

"No person shall after the first day of January, 1892, be appointed the medical officer of health of any county, or of any such district or combination of districts as contained, according to the last published census for the time being, a population of 50,000 or more inhabitants, unless he is legally qualified for the practice of medicine, surgery, and midwifery, and also is registered in the *Medical Register* as the holder of a diploma in sanitary science, public health or state medicine, under sec. 21 of the Medical Act, 1886, or has been, during three consecutive years preceding the year 1892, a medical officer of a district or combination of districts, with a population according to the last published census of not less than 20,000, or has before the passing of this Act been, for not less than three years, a medical officer or inspector of the Local Government Board."

‖*Examinations in Public Health or State Medicine.*—Certain regulations were adopted by the General Medical Council in 1889, and are binding on candidates registered as medical practitioners, or entitled to be so registered, after Jan. 1, 1890. These regulations are designed

* Art. I. appeared in the "Medical Annual" for 1890.

‖The Royal College of Physicians of London have recently (Dec. 16, 1890) adopted the following Synopsis of the course of Laboratory Instruction :—

I. PHYSICS.—Gases, examination of their physical properties; their weight and bulk under varying alterations of pressure and temperature, and the movements thereby set up; diffusion, with especial reference to warming and ventilation. Anemometers and their uses. Liquids, their physical properties, their pressure and flow through tubes and conduits, their action on gases. Meteorological instruments, their construction and use; barometers; thermometers; hygrometers; rain gauges.

II. CHEMISTRY.—The analysis of water for drinking purposes, including the qualitative and quantitative estimation of total solids (lime, magnesia, chlorides, sulphates, nitrates and nitrites, ammonia and lead), and loss on ignition of solids; determinations of hardness, of organic impurities, and of acidity and alkalinity. Chemical methods of treating sewage. The examination of air for the detection of polluting gases. Simple methods of eudiometry. Estimation of the quantity of carbon dioxide in air.

III. MICROSCOPY.—The recognition of the constituents of food, such as starches and muscular fibre. The recognition of the chief fibres of clothing, such as wool, cotton and silk. The recognition of constituents of ordinary dust, and deposits from water.

IV. BACTERIOLOGY.—Including the cultivation and recognition of micro-organisms.

V. PARASITES and other organisms, infesting food stuffs, or the human body.

to ensure "the possession of a distinctively high proficiency, scientific and practical, in all the branches of study which concern the public health." The regulations provide as follows :—

A period of not less than twelve months shall elapse between the attainment of a first registrable qualification in medicine, surgery, and midwifery, and the examination for a diploma in sanitary science, public health, or state medicine.

Every candidate shall have produced evidence of having attended, after obtaining a registrable qualification, practical instruction in a laboratory approved of by the body granting the qualification, during a period of six months.

Every candidate shall have produced evidence that during a period of six months, after obtaining a registrable qualification, he *either* has practically studied the duties of out-door sanitary work under the Medical Officer of Health of a county or large urban district, *or else has himself held appointment as Medical Officer of Health under conditions not requiring the possession of a special sanitary diploma.* (Passed in this amended form on November 30, 1890.)

The examination shall have been conducted by examiners specially qualified, and shall comprise laboratory work as well as written and oral examination.

The rules as to study shall not apply to :—

(1,) Medical practitioners registered, or entitled to be registered on or before January 1, 1890.

(2,) Registered medical practitioners who have for a period of three years held the position of medical officer of health to any county, or to any urban district of more than 20,000 inhabitants, or to any entire rural sanitary district.

The Public Health Act, 1875.—This Act, which consolidated the previous enactments relating to public health, is, up to the present, for England and Wales, the basis of all practical sanitary action.

It is impossible to summarise the provisions of the 342 sections of the Act to any useful purpose. The text of the Act itself must be carefully studied, and for this purpose the medical officer of health will find Dr. Hime's "Practical Guide to the Public Health Act" the most useful text-book for initial study. The guide also contains abstracts of other important Acts bearing on public health, the administration of which is entrusted to medical officers of health.

As reference books, the last edition of the Act by Glen, Lumley, or Fitzgerald should be obtained.

Port Sanitary Authorities.—Secs. 287 to 292 provide for the constitution of port sanitary authorities, and the duties of port medical officers of health and port inspectors are duly defined in the "Orders" of the Local Government Board. (See "Loc. Govt. Orders," Shaw & Co.)

Note that sec. 110 of the Public Health Act provides that for the provisions of the Act relating to nuisances, any ship or vessel lying in any river, harbour, or other water within the district of a local authority

shall be subject to the jurisdiction of that authority *in the same manner as if it were a house within such district;* and that the Public Health (Ships) Act of 1885, extends the action of the infectious disease clauses of the Public Health Act (Secs. 120, 121, 124, 126, 128, 131, 132, and 133) to ships or vessels.

No provision appears to have been yet made in the Public Health Acts for dealing with the water supply of ships, or with polluted water found on ships or vessels.

Orders of the Local Government Board.—The Local Government Board, the central authority in relation to sanitary matters, issue from time to time orders and memoranda relating to public health, defining the duties and powers of medical officers of health and of inspectors of nuisances, dealing with the administration of the Acts relating to public health, and prescribing regulations to be taken for effectual dealing with epidemic, endemic, or infectious diseases, and for preventing the spread of such diseases under the powers conferred upon them in the Public Health Act.

These orders are conveniently collected in Shaw's "Local Government Orders," and a careful study of them in detail is essential.

Bye Laws.—Bye laws may be made by local authorities for the regulation of new streets and buildings, the prevention of nuisances, the regulation of slaughter houses, common lodging houses, and houses let in lodgings, and for other sanitary purposes. The Local Government Board has issued a series of model bye laws for the use of sanitary authorities, and these should be carefully studied as indicating the proper scope and extent of such bye laws. The annotated bye laws issued by Knight & Co., are very usefully edited with diagrams and notes.

RECENT SANITARY LEGISLATION.—**Cholera Regulations: Ports (General).* Aug. 28, 1890.—This order of the Local Government Board practically repeats, with some alterations, the general order of 1883. The object of the regulations is to secure effectual action in the case of ship-brought cholera, and the procedure laid down is as follows :—

(1,) If any officer of Customs, on the arrival of any ship, ascertains, or has reason to suspect that the ship is infected with cholera, he detains the ship in a specified anchorage, and forthwith gives notice to the sanitary authority (Arts. 2 and 4).

(2,) The sanitary authority causes the ship to be visited and examined by their medical officer of health, who, upon finding that she is infected with cholera, certifies the same to the master of the ship, who thereupon must anchor her in a specified anchorage where she remains until the requirements of the order have been fulfilled. During this time no person may leave the ship (Arts. 7, 9, and 10).

* London, Printed by Eyre & Spottiswoode.

(3,) The medical officer of health then proceeds to examine every person on board; *certifies* in case of every person suffering from cholera or from any suspicious illness, and removes all cholera cases, if in a fit condition for removal, to hospital; or, if unfit, detains them on the ship which must in such case remain subject to his control. All suspected cases may be detained for two days on board ship or in hospital or other suitable place for observation.

Every person not *certified* is permitted to land immediately on giving to the medical officer of health his name and place of destination, and where practicable, his address, to be subsequently transmitted to the sanitary authority of the district to which he intends going (Arts. 12, 13, and 14).

(4,) The disinfection or destruction of infected articles, and all necessary cleansing and disinfection of the ship for preventing the spread of infection is then secured—the master of the ship carrying into execution the directions given by the medical officer of health to this end.

(5,) If any death from cholera take place upon such ship while detained, the body may be taken out to sea, properly loaded, and committed to the deep, or may be delivered into the charge of the sanitary authority for interment, as the authority or their medical officer of health may determine.

¶ The master of every ship infected with cholera shall, when within three miles of the coast of any part of England and Wales, cause to be hoisted the Commercial Code Signal "Q," being a yellow flag, under the national ensign, and shall keep the same displayed during the whole of the time between sunrise and sunset (Art. 19).

¶ The medical officer of health may, independently of the Customs, visit and examine any ship coming within the jurisdiction of the sanitary authority, which he has reason to suspect is infected with cholera, or which comes from a place infected with cholera (Art. 8).

¶ Any person wilfully neglecting or refusing to obey or carry out, or obstructing the execution of these regulations, is liable to a penalty not exceeding *Fifty Pounds*.

The Infectious Disease (Prevention) Act, 1890* (53 & 54 Vict., ch. 34). An Act to prevent the spread of infectious disease (Aug. 4, 1890).—The provisions of this Act shall extend: (*a*,) To every London district after the expiration of four months from the passing of this Act; and (*b*,) To any urban or rural sanitary district after the adoption thereof.

The Act may be adopted in similar manner to the Notification Act of 1889,† and refers to the infectious diseases specifically mentioned in that Act, viz. :—

Small Pox	And the fevers known by any of the following names :—
Cholera	Typhus
Diphtheria	Typhoid
Membranous Croup	Enteric
Erysipelas	Relapsing, Continued, or Puerperal
The disease known as Scarlatina or Scarlet Fever	

* Eyre & Spottiswoode, Fleet Street, E.C. 1½d. † See "Med. Ann." for 1890, p. 552.

The Act provides that the Medical Officer of Health may be empowered by an order of a justice to inspect any dairy, situate within or without his district, which he has reason to suspect is concerned in the dissemination of disease, and to inspect, in company with a veterinary surgeon or veterinary inspector, the animals in the dairy; and the local authority may, upon his report, make an order prohibiting the sale of milk from such dairy within their district until danger is removed (Sec. 4).

Section 5 of the Act repeals (in regard to any urban or rural district) Section 120 of the Public Health Act, 1875, relating to disinfection (q.v.) and provides that upon the certificate of the Medical Officer of Health or of any other registered medical practitioner, the local authority shall, through their clerk, give notice in writing to the owner or occupier of an infected house, that the house and any infected articles therein will be cleansed and disinfected by the local authority at the cost of such owner or occupier, unless he informs them within twenty-four hours that he will cleanse and disinfect the house and articles therein *to the satisfaction of the Medical Officer of Health* within a time fixed in the notice.

In default, the house and articles shall be cleansed and disinfected by the officers of the local authority, and the expenses incurred may be recovered in a summary manner.

Provided that, at the discretion of the authority or of their Medical Officer of Health, the same may without any such notice being given, as aforesaid, but with the consent of such owner or occupier, be cleansed and disinfected by the officers of, and *at the cost of the local authority*.

Section 6 empowers any local authority or their Medical Officer of Health to require, by notice in writing, the owner of any clothing, bedding, or other infected articles to deliver them over to an officer of the authority for removal for the purpose of disinfection, and any person who fails to comply with such a requirement shall be liable to a penalty not exceeding ten pounds.

The bedding, clothing, and other articles are to be disinfected by the authority, and brought back and delivered to the owner free of charge, compensation to be paid for any unnecessary damage.

Section 7 provides for the due disinfection of infected premises and of contained infected articles by any person ceasing to occupy any house, room or part of a house, under a penalty of ten pounds in case of default or of false statement to the owner or to any person negotiating for the hire of such house, room, or part of a house.

Section 8 provides that no person shall, without the due sanction of

the Medical Officer of Health, or of a registered medical practitioner, retain unburied elsewhere than in a public mortuary, or in a room not used at the time as a dwelling place, sleeping place, or workroom, for more than forty-eight hours, the body of any person who has died of an infectious disease.

Section 9 provides that it shall not be lawful for any person to remove the body of a person who has died of any infectious disease in any hospital, or place of temporary accommodation for the sick, from such hospital except for the purpose of being forthwith buried, under a penalty of ten pounds. Removal to a mortuary is, of course, permitted; and the section acquires force upon the certificate of the Medical Officer of Health or of a registered practitioner.

Section 10 provides for the removal, by order of a justice, of any dead body retained as in Sec. 8, or of any body so retained in any house or building as to endanger the health of the inmates of such house, or of any adjoining or neighbouring house, to a mortuary; and for its burial within a time limited in the order, or, if necessary, for its immediate burial.

Section 11 prohibits the use of any public conveyance other than a hearse for the conveyance of the body of a person who has died from any infectious disease, unless the fact is previously notified to the driver, who must immediately afterwards provide for the proper disinfection of such conveyance.

Section 12 provides for the detention in hospital at the cost of the local authority, of any person suffering from any infectious disease who would not, on leaving such hospital, be provided with lodging or accommodation in which proper precautions could be taken to prevent the spreading of the disorder.

Section 13 prohibits the casting of infectious rubbish without previous disinfection, into any ashpit, or other receptacle for the deposit of refuse matter.

The Housing of the Working Classes Act, 1890* (53 & 54 Vict., ch. 70). An Act to consolidate and amend the Acts relating to artizans and labourers' dwellings and the housing of the working classes.

Part I. *Unhealthy Areas.*—Section 4 of this Act provides that where an official representation is made to the local authority that within a certain area in the district of such authority, either:—

(a,) Any houses, courts, or alleys are unfit for human habitation, or

(b,) The narrowness, closeness, and bad arrangement, or the bad condition of the streets and houses, or groups of houses, within such area, or the want of light, air, ventilation, or proper conveniences, or any other

* Eyre & Spottiswoode, Fleet Street, E.C. Price 10½d.

sanitary defects, or one or more of such causes, are dangerous or injurious to the health of the inhabitants, either of the buildings in the said area or of the neighbouring buildings; and that the evils connected with such houses, courts, or alleys, and the sanitary defects in such area cannot be effectually remedied otherwise than by an improvement scheme for the rearrangement and reconstruction of the streets and houses, within such area, or of some of such streets or houses, the local authority shall take such representation into their consideration, and if satisfied of the truth thereof, and of the sufficiency of their resources, shall pass a resolution to the effect that such area is an unhealthy area and that an improvement scheme ought to be made in respect of such area, and after passing such resolution they shall forthwith proceed to make a scheme for the improvement of such area.

¶ An official representation shall mean a representation made to the local authority by the Medical Officer of Health, and a medical officer shall make such representation whenever he sees cause to make the same.

Also, upon complaint from two local justices of the peace, or from twelve or more local ratepayers, it shall be the duty of the Medical Officer of Health forthwith to inspect and to make an official representation stating the facts of the case, and whether in his opinion the said area or any part thereof is an unhealthy area or is not an unhealthy area.

The rest of Part I. of the Act is occupied by details as to the further elaboration and execution of the scheme by the local authority, and requires that the scheme shall (if the confirming authority, *i.e.*, the Local Government Board* so require) provide for the accommodation of such number of those persons of the working classes displaced in the area (with respect to which the scheme is proposed) in suitable dwellings to be erected in such place or places either within or without the limits of the same area as the Local Government Board may require.

Part II.—*Unhealthy Dwelling Houses.*—It is the duty of the Medical Officer of Health of every district to represent to the local authority of that district any dwelling house which appears to him to be in a state so dangerous or injurious to health as to be unfit for human habitation.

Upon complaint from any four or more householders living in or near to any street that any dwelling-house in or near that street is in a condition so dangerous or injurious to health as to be unfit for human habitation, the Medical Officer of Health must forthwith inspect and report upon the same, and if he is of opinion that the dwelling-house is in the condition aforesaid, must represent the same to the local authority.

If, after three months, the local authority declines or neglects to take any proceedings to put this part of the Act in force, the said householders may petition the Local Government Board for an inquiry, and the Board may, after due inquiry, order the local authority to proceed under this part of the Act.

* In the case of extra Metropolitan local districts in England and Wales.

Closing Order and Demolition.—It is the duty of a local authority to take steps to ascertain whether any house within their district is in a state so dangerous or injurious to health as to be unfit for human habitation; and if upon the representation of any officer of such authority, or information given, any dwelling-house appears to them to be in such state, to forthwith take proceedings against the owner or occupier for closing the dwelling-house, and the forms for the purpose of this section are set forth in the fourth schedule of the Act and comprise sequentially :—

Form A. Form of notice requiring premises to be made fit for habitation—signed by officer of local authority.

Form B. Form of summons for closing order. } Before a court of summary jurisdiction.
Form C. Form of closing order. }

Section 33 provides that where a closing order has been made in respect of any dwelling-house, and not been determined by a subsequent order, then the local authority, if of opinion that the dwelling-house has not been rendered fit for human habitation, and that the necessary steps are not being taken with all due diligence to render it so fit, and that the continuance of any building being—or being part of—the dwelling-house, is dangerous or injurious to the health of the public or of the inhabitants of the neighbouring dwelling-houses, shall pass a resolution that it is expedient to order the demolition of the building.

Section 34 provides for the taking down and removing, by the owner, of the building, mentioned in the order for demolition, within three months after service of the order; in default the local authority are to take down and remove the building and sell the materials, paying over the balance of money (if any) to the owner, after deducting the expenses incident to such taking down.

Obstructive Buildings.—Section 38, *et seq.*, deal with the steps necessary to secure the pulling down of obstructive buildings.

An obstructive building is one which, though not in itself unfit for human habitation, is so situate that by reason of its close proximity to or contact with any other buildings it causes one of the following effects, that is to say :—

(*a*,) It stops ventilation, or otherwise makes, or conduces to make, such other buildings to be in a condition unfit for human habitation, or dangerous or injurious to health; or

(*b*,) It prevents proper measures from being carried into effect for remedying any nuisance injurious to health or other evils complained of in respect of such other buildings.

In any such case the Medical Officer of Health shall represent to the local authority the particulars relating to such obstructive building, stating that in his opinion it is expedient that the building should be pulled down.

Part III.—*Working Class Lodging Houses.*—Part III. is "adoptive,"

and the purposes of this part of the Act include the provision of "lodging houses for the working classes" by local authorities.

The Public Health Acts Amendment Act, 1890* (53 and 54 Vict., ch. 59). An Act to Amend the Public Health Acts (Aug. 18, 1890).—The Act is divided into parts, of which Part III. relates to sanitary matters.

The Act is adoptive, and an urban authority may adopt all or any of such parts. A rural authority may adopt Part III. so far as it is declared by this Act to be applicable to such authority.

Part III., *Sanitary and Other Provisions.*—Several of the provisions in this section are of considerable practical importance. Section 16 and 17 provide against the throwing into any sewer or drain, any matter or substance by which the free flow of the sewage may be interfered with, and against the turning of any chemical refuse or any waste steam, condensing water, heated water or other liquid (above 110° Fh.) into a sewer or drain so as to cause a nuisance.

Section 18 provides for the making of connections to the sewers by the local authority at the request of the owner or occupier, who must pay the cost of making such connection in advance to the local authority.

Section 19 alters the meaning of "drain" and "sewer" in certain cases where two or more houses belonging to different owners are connected with a public sewer by a single private drain.

Section 20 provides for the regulation of sanitary conveniences erected by urban authorities.

Section 21 provides for the due keeping clean of any sanitary convenience used in common by the occupiers of two or more separate dwelling houses, or by other persons; and fixes the responsibility upon each of the persons having the use thereof in common.

Section 22 provides for the due provision of sufficient accommodation in the way of sanitary conveniences in all workshops or manufactories.

Section 24 prohibits the occupation of any room, or portion of a room, which extends immediately over any privy (not being a water-closet or earth-closet), or immediately over any cesspool, midden, or ashpit.

Section 25 prohibits the erection, without proper precautions, of a new building on any ground which has been filled up with any matter impregnated with fæcal, animal, or vegetable matter.

Section 28 extends the provisions of the 116—119 sections of the

* Eyre & Spottiswoode. Price 3½d.

Public Health Act (relating to unsound meat) to all articles intended for the food of man, and exposed for sale or deposited as for sale.

Sections 29 to 31 provide for the yearly licensing of slaughter houses, and for the revocation of the license in the case of any licensed occupier of a slaughter house, who is convicted of selling or exposing for sale, or of having in his possession or on his premises, the carcase of any animal or any piece of meat or flesh diseased or unsound or unwholesome or unfit for the use of man as food.

The Customs and Inland Revenue Act, 1890* (53 Vict., cap. 8).—This Act provides that the assessment to inhabited house duty is to be discharged, in the case of houses adapted to be let in separate dwellings at 7/6 a week or under, on condition that the houses are certified by the Medical Officer of Health as in good sanitary state and fit for the accommodation of the families inhabiting them. It is the duty of the Medical Officer of Health to inspect such houses and grant such certificate upon the request of the person liable to pay the house duty; but no fee is assigned to him for the performance of this duty.

Medical Officers of Health will do well to set a high standard of sanitary efficiency in the case of houses referred to them under this Act.

USEFUL BOOKS FOR STUDENTS OF PUBLIC HEALTH.

Books of Reference are placed last.

GENERAL.

LOUIS C. PARKES' Hygiene (Lewis's Practical Series). A good students' text-book. 9/-

WHITELEGGE's Hygiene (Cassell's Manuals). 1890. 7/6.

WILSON's Handbook of Hygiene. Sixth Edition. A good introductory text-book. Churchill. 10/6.

WILLOUGHBY's Hygiene (Designed for Science and Art Department). Collins, London and Glasgow. 3/6.

PARKES' Hygiene. Edited by de Chaumont. Sixth Edition. The recognized English text-book. Churchill. 18/-

WYNTER BLYTH's Manual of Public Health. Macmillan, 1890. 17/-

Our Homes and How to Make them Healthy. Edited by Dr. Shirley Murphy. Contains very interesting and practical articles. 15/-

SEWERAGE, DRAINAGE, ETC.

Annotated Bye-Laws of the Local Government Board, relating to cleansing of Privies, Common Lodging Houses, Nuisances, New Streets and Buildings, and Slaughter Houses. Knight & Co. 8/6.

* Eyre & Spottiswoode. Price 2½d.

Sir DOUGLAS GALTON'S Observations on the Construction of Healthy Dwellings. Macmillan. 10/6.

BUCHAN'S Plumbing. Crosby, Lockwood & Co. 3/6.

CORFIELD'S Treatment and Utilization of Sewage. Macmillan. 16/-

STEVENS HELLYER'S The Plumber and Sanitary Houses. B. T. Batsford. 10/6.

BALDWIN LATHAM'S Sanitary Engineering. E. & F. N. Spon. 30/-

ANALYSIS OF WATER, MILK, AIR, ETC.

CORNELIUS FOX'S Water, Air, and Food. Churchill. 12/6.

WANKLYN'S Water Analysis. Seventh Edition. Kegan Paul & Co. 5/-

WANKLYN'S Milk Analysis. Second Edition. Kegan Paul & Co. 5/-

WANKLYN'S Air Analysis. Kegan Paul & Co., 1890. 5/-

All Prof. Wanklyn's Manuals are very practical.

WALLEY'S Practical Guide to Meat Inspection. Young J. Pentland, 1890. 8/6.

VITAL STATISTICS.

NEWSHOLME'S Vital Statistics. Swan, Sonnenschein & Co. Second Edition.

Registrar General's Annual Summaries. Eyre & Spottiswoode. 1/6.

PUBLIC HEALTH ACTS, ETC.

HIMES'S Practical Guide to the Public Health Acts. Bailliére, Tindall & Cox. 5/-

SHAW'S Local Government Orders (Sanitary). Shaw & Co. 25/-

LUMLEY'S Public Health Acts. Last Edition. Shaw & Co.

GLEN'S Public Health Acts. Last Edition. Knight & Co. 36/-

GENERAL PATHOLOGY, BACTERIOLOGY, ETC.

PAYNE'S General Pathology. Smith, Elder & Co. 12/6.

WYNTER and WETHERED'S Clinical Pathology. Churchill, 1890. 12/6.

CROOKSHANK'S Bacteriology. W. K. Lewis. 21/-

SALOMONSEN'S Bacteriological Technology. William Wood & Co., New York, 1890.

Micro-organisms in Disease. New Sydenham Society.

Disinfection by Heat. Extract from Annual Report of Medical Officer of Local Government Board. Eyre & Spottiswoode. 1/6.

Sir J. SIMON'S Public Health Reports. 2 Vols. Published for Sanitary Institute. Churchill, 1887.

Sir J. SIMON'S English Sanitary Institutions. Cassell & Co., 1890. 18/-

Annual Reports of Local Government Board. Supplement of Medical Officer.

A further list will be found in the Cambridge University Examination Papers (Sanitary Science) for 1890. Cambridge University Press Warehouse, Ave Maria Lane, London. 1/-

The Difficulties of the Lunacy Act, 1890.

By LIONEL A. WEATHERLY, M.D.

To severely criticise the working of a new Act of Parliament, which has only come into operation during the last eight months, would be manifestly unfair; though we may consider it useful in many ways, carefully look at the difficulties which have been encountered, with a hope that when all concerned in the carrying out of this Act know and more fully realise their duties, the various clauses to which severe objections have been made, may be found to be not so absolutely antagonistic to the early and proper treatment of those mentally afflicted.

The Magisterial interference has always been a very sore point with the medical profession; and as the "Lancet" has often pointed out, if that interference had been simply to prove the *bona fides* of the certifying medical man, no one would have raised a voice against it; but as it now stands there may be a grave fear that some bigoted interfering and fussy magistrate may do serious harm to a poor lunatic, by withholding from him the only chance he may have of recovery from an illness, which if not properly and quickly treated, may mean life-long incarceration for himself, and anxiety and expense to his family. We, however, firmly believe that a very large majority of justices will look at the matter in a common-sense light, and will not attempt to override the opinion of medical men who have, in good faith, and as if upon oath, certified that A or B is a person of unsound mind, and ought to be placed under treatment and in safety.

Of course, if a magistrate considers that the facts stated by the medical men, and the relatives signing the petition, are inadequate to make him believe the person to be of unsound mind, and if after a careful, and thorough examination of the patient, he is confirmed in his opinion, it is only his duty to act upon the opinion so formed; but we firmly believe that such cases will be rare indeed, for medical men will be very chary of signing certificates unless they are convinced that the evidence they have before them is sufficient to prove that the patient is suffering from a disease of the mind, requiring distinct and special moral and medicinal treatment, difficult if not impossible, to be adopted in his own home.

And now, after these few introductory remarks, let us get to our subject.

The first and foremost difficulty which has been encountered in many parts of England in connection with this Act is:—

1.—*The difficulty in finding a properly qualified magistrate to carry out the Act, and make the necessary order.*

To a large extent this has been caused by the inadequacy of the number of magistrates that have been appointed in certain districts; and from what Dr. Percy Smith, the Superintendent of Bethlem Hospital, has written about this difficulty, we should imagine that the Metropolitan district is badly off in the number of magistrates duly qualified. I believe in some of the Metropolitan districts only some four magistrates have been appointed, and petitioners have wandered from one place to another, only to find that either the magistrate was out of town, or engaged in some important business, etc., etc.; and great inconvenience, not to say great danger, has been caused in many cases, not only to the patient, but also to the community at large, by such delay.

In the County of Somerset there should be but little difficulty in this respect, as, at the Michaelmas Quarter Session, all the magistrates were appointed to act in their respective Petty Sessional Divisions; and this plan has, I believe, been adopted in many other counties.

In the City of Bristol, the Clerk to the Justices, Mr. Holmes Gore, has adopted the following plan; a plan which we believe could not be improved upon in a city, though, of course, it would be impossible to adopt it in the counties, as the magistrates do not meet more than once a week; and the petty sessional courts being at long distances from each other, another difficulty in carrying out this plan becomes evident.

Mr. Holmes Gore sent the following letter to all the medical men in the City of Bristol, together with the names of the magistrates appointed to act:—

PETTY SESSIONAL COURT HOUSE,
BRIDEWELL STREET,
BRISTOL, Feb. 14, 1890.

Sir,—I am directed by the Magistrates to inform you that when the new "Lunacy Act" comes into operation, two of those who are qualified to act will be in attendance here every day (except on Sunday, Good Friday, and Christmas Day).

If you should be consulted in any case coming within the provisions of the statute, it may be convenient to have a Form of Petition, etc., and in sending those enclosed, I am to request you that they should not be presented at the private residence of any Magistrate, but sent here, and the Petition will meet with immediate attention.

I am, Sir,
Faithfully yours,
(Signed) T. HOLMES GORE,
Clerk to the Bristol Justices.

The list of Magistrates is a long one, no less than forty-five being placed on the record as qualified to act.

We have had some considerable discussion with Mr. Gore concerning this Act, and some of his observations are so much to the point, that, with his permission, we will place before our readers his view of the magisterial duties: (1,) The only principles upon which the Bristol Justices have decided to act are, that they will only receive petitions when performing their magisterial functions at the Petty Sessional Court House, and that in every possible case they will see the alleged lunatic personally and privately; (2,) In urgent cases the friends of an alleged lunatic will be requested to put into operation the urgency provisions; (3,) In all cases each must rest on its own "merits," (if I may use a legal term) and depend on the facts disclosed, and the arrangements made by the Justices, who may be sitting for the week—but the intention of the majority of the Justices would undoubtedly be to visit at the place where the person afflicted is residing; (4,) That it would be prudent that the second medical certificate should be signed by a gentleman whose opinion is likely to be acceptable to the judicial authority.

By this Mr. Gore evidently means that the Magistrates are naturally more likely to accept the certificate of a medical man known to them by repute, than that of some young practitioner of whom they know nothing.

We would here remark that the acceptability of a medical certificate should in a great measure be proved by the facts, which the medical man himself has observed, and which he concludes are evidence of insanity, and which the Magistrate must remember he has practically stated on oath.

II.—*Magistrates who are not qualified, signing.*—This has occurred in several instances during the past eight months, and has evidently been a source of great trouble and inconvenience. We cannot but think that it would have been wise to have had printed on the order sheet, in red letters, a word of warning that only Magistrates duly chosen and appointed to act for this purpose are qualified to sign. It must be clear to all that the superintendent of an Asylum cannot be cognisant of who are, and who are not qualified to act; and that, therefore, he may unknowingly be doing an illegal act by receiving a patient, whose order for admission has been made out by a person having no judicial authority under this Act. However, we presume that this difficulty will lapse with time and experience.

III.—*Difficulties of Section* 8.—This section deals with the right of the patient to be visited by, or taken before a judicial authority, other than

the authority who signed the order, within twenty-four hours of his reception *unless* the patient was personally seen by the authority who signed the order—*or*, unless the medical officer of the Asylum sends a certificate to the Commissioners, that the exercise of such right would be prejudicial to the patient.

This section proves to our mind how necessary it is that every patient received under an order of a Magistrate should be personally seen by that Magistrate, for it must be patent to all that to inform many patients of their right within twenty-four hours of reception would be very detrimental to them, and, although the Act allows medical superintendents to prevent this taking place, still there are few who care about exercising this power.

Again, there is another awkward thing which might arise, and which was pointed out by Dr. Adams, a Magistrate for one of the Metropolitan districts. A patient who had been received on a reception order and had not been seen by the Magistrate signing, might within twenty-four hours of treatment be for short spaces of time coherent, apparently quite sensible, or might, from realising his position, be able to control his insane actions, or delusions, etc.; and when seen by an independent authority, might be considered not a fit person to be detained, and thus at once a grave difficulty would arise between brother Magistrates, and probably a serious injury be done to the patient and his relatives, and, in some cases, to the general community.

Let us, then, seriously urge upon all medical men that they earnestly request the judicial authority to visit the patient, and personally examine him before signing the order, however certain such judicial authority may be, from the statement and certificate, that the patient is a person of unsound mind, etc.

IV.—*Duration of Urgency Order.*—An urgency order remains in force for seven days only, unless a petition has been duly presented within this time, in which case the urgency order remains in force until such petition is disposed of. Therefore, if no petition is pending at the end of seven days the patient must be discharged.

In many cases this section would present no difficulty, but there have been cases during the past eight months showing the most grave results of this section. Dr. Percy Smith has told us of cases of severe puerperal mania sent to Bethlem from long distances under urgency orders, and of the difficulty in getting a petition properly presented in the short space of seven days, so that he has been peremptorily obliged to discharge, it may be, a dying patient. There is no doubt whatever in our minds that the seven days ought to be as soon as possible altered to fourteen.

It will be seen, we think, that most of the difficulties met with are in a great measure due to want of knowledge, and inadequacy of the number of Magistrates appointed to act; and this last difficulty is a very formidable one in counties, especially with regard to the admission of pauper patients; we have no doubt, however, that at the next Michaelmas Session those counties and boroughs with inadequate numerical strength of Magistrates appointed, will see how important it is that the numbers should be greatly increased, even if they do not go so far as to copy the good example of Somerset, and appoint all Magistrates in their respective Petty Sessional districts.

With regard to the section dealing with the care and treatment of the patient, and more especially with regard to the administration of the estate of the patient, we hope to have something to say next year, when the Act having been longer in operation, practical experience will enable us to speak on these points with some amount of authority.

Lunatic Asylums and Homes for Inebriates In Great Britain and Ireland.

We are very anxious to make this list complete, and to give all necessary information; but unless our circular of enquiry—*which in every case is stamped for reply*—is promptly returned, we cannot undertake the responsibility of inserting particulars of an Establishment which may have been closed.

ABERDEEN.—*Elmhill House.* Res. Med. Sup., Wm. Reid., M.D.; Treasurer, Wm. Carmie, 27, Exchange Street.

ABERGAVENNY.—*Joint Counties Asylum.* Med. Sup., James Glendinning, M.D.

ALTON (Hants).—*Westbrook House.* Prop., Mrs. E. J. Burnett.

ARGYLL and BUTE.—*District Asylum*, Lochgilphead. Res. Med. Sup., J. Cameron, M.D. Access—Rail to Greenock, thence by Steamer to Ardrishaig, 2½ miles distant.

ARMAGH.—*Course Lodge*, Richhill, 5 miles from Armagh (for ladies only). Proprietors, James and Wm. Orr; Visiting Physician, H. Frazer, M.D., Armagh. Access—Richhill Station, thence by own Conveyance, 2 miles.

The Retreat. Proprietor, Mr. A. D. Allen. (For 20 male and 15 female patients, middle class). Access—Richhill, thence cab 1½ miles.

AYR.—*District Asylum.* Med. Sup., C.H. Skae, M.D.

BALLINASLOE (Co. Galway).—*District Lunatic Asylum.* Res. Med. Sup., R. V. Fletcher, M.D. Access—Ballinasloe.

BANFF.—*District Asylum*, Ladysbridge. Visiting Physician, Wm. Ferguson, M.D.

BARNOLDSWICK (Yorkshire).—*Greta Bank.* Prop., Mrs. Parker.

BASCHURCH (Shropshire).—*Boreatton Park*, 10 miles from Shrewsbury. Res. Med. Sup., Dr. Sankey. Ascess—Baschurch Station.

See page 630.

BATH.—*Bailbrook House.* Prop. and Res. Med. Sup., Lionel A. Weatherly, M.D. Access—Bath, 15 minutes' drive.

See page 633.

BECKENHAM (Kent).—*Springcroft.* Prop., Mrs. Stilwell.

BEDFORD.—*Bishopstone House*, Ashburham road (for 10 females). Prop. and Med. Sup., Wm. Simpson Craig, M.D. Access—Bedford. *See page* 636.

Springfield House Asylum; 1 hour from London. Res. Med. Sup., D. Bower, M.D. Access—Bedford, 1½ mile.

BELFAST.—*Belfast District Lunatic Asylum.* Med. Sup., A. S. Merrick, M.D.

BEVERLEY.—*East Riding County Asylum.* Res. Med. Sup., M. D Macleod, M.B. Access—Beverley Station, 2 miles.

BIRMINGHAM.—*Birmingham City Asylum*, Winson Green. Res. Med. Sup., E. B. Whitcombe. Access—Winson Green, ½ mile, Soho, ¼ mile.

Midland Counties Idiot Asylum. House Governor and Sec., W. G. Blatch; Hon. Med. Sup., J. H. Kimbell, F.R.C.S.; Med. Officer, R. H. Foster, M.R.C.S. Access—Knowle Station, ½ mile.

BODMIN.—*Cornwall County Asylum.* Med. Sup., Dr. R. Adams.

BOX (Wilts).—*Kingsdown House*, 5 miles from Bath. Prop., Mrs. E. A. Nash; Res. Med. Sup., Dr. J. J. F. Barnes. Access—Box.

BRENTWOOD.—*Essex County Asylum.* Med. Sup., Dr. G. Amsden.

BRIDGEND.—*Glamorgan County Asylum.* Res. Med. Sup., H. T. Pringle, M.D. Access—Bridgend, 1½ miles.

BRISTOL.—*Brislington House*, 2½ miles from Bristol. Res. Med. Sups., Drs. C. H. and B. B. Fox.

City and County Asylum. Med. Sup., Harry A. Benham, M.D.

Northwoods House, Winterbourne, 7 miles from Bristol. Props., Reginald Eager, M.D., and T. G. Seymour. Access—Cab from Bristol, or from Fishponds, Yate, or Patchway Stations. *See page* 636.

BRITON FERRY (Glamorgan).—*Vernon House*, near Neath and Swansea. Med. Sup., C. Pegge. Access—Briton Ferry Station, 3 minutes' walk. *See page* 638.

BROMSGROVE.—*Birmingham Borough Asylum*, Rubery Hill, near Bromsgrove. Res. Med. Sup., A. C. Suffern, M.D. Access—Rubery Station.

BURGESS HILL.—*St. George's Retreat*, Ditchling. Props., Misses Eccles.

BUXTON.—*Wye House.* Res. Phys., F. K. Dickson, F.R.C.P. Access—Buxton.

CAMBRIDGE.—*County Asylum*, Fulbourn. Res. Med. Sup., E. C. Rogers, M.R.C.S.

CANE HILL, Purley (Surrey).—*London County Asylum.* Res. Med. Sup., Dr. J. M. Moody. Access—Coulsdon Station.

CARLISLE.—*County Asylum.* Res. Med. Sup., J. A. Campbell, M.D. Access—Carlisle, 3 miles.

CARMARTHEN.—*Joint Counties Asylum.* Med. Sup., G. J. Hearder, M.D.

CHARTHAM (Near Canterbury).—*Kent County Asylum.* Res. Med. Sup., Dr. R. Spencer. Access—Chartham Station, 1 mile.

CHEADLE.—*Manchester Royal Lunatic Hospital.* Res. Med. Sup., G. W. Mould, M.R.C.S.

CHESTER.—*Cheshire County Asylum.* Med. Sup., J. H. Davidson, M.D.

CHURCH STRETTON.—*Stretton House*, Shrewsbury (for gentlemen). Med. Sup., Dr. H. Barnett. Access—Church Stretton Station, 10 minutes' walk.

The Grove House (for ladies). Res. Prop., Mrs. McLintock.

COLCHESTER.—*Eastern Counties Idiot Asylum.* Res. Med. Attend. J. Lloyd Roberts, M.B., B.A.; Res. Sup. and Sec., John J. C. Turner Payment cases received from all parts. Election cases only from Eastern Counties.

CORK.—*District Asylum.* Med. Sup., Oscar Woods, M.D. Access—Cork, 1 mile.

CUPAR (Fifeshire).—*Fife and Kinross District Asylum.* Med. Sup., A. R. Turnbull, M.B.

DARLINGTON (Durham).—*Dinsdale Park.* Med. Sup., J. W. Eastwood, M.D., J.P.

DARTFORD.—*City of London Asylum*, Stone. Res. Med. Sup., Dr. E. W. White. Access—S.E.R., Dartford, 1 mile.

DENBIGH (North Wales).—*North Wales Counties Lunatic Asylum.* Med. Sup., Dr. Llewelyn F. Cox. Access—Denbigh, 1 mile.

DERBY.—*Borough Asylum*, Rowditch. Res. Med. Sup., Dr. Macphail.

County Asylum, Mickleover. Res. Med. Sup., Dr. Lindsay. Access—Derby, 5 miles, Mickleover, 2 miles.

DEVIZES.—*Wilts County Asylum.* Res. Med. Sup., John Ireland Bowes, M.R.C.S. Access—Devizes, 1 mile.

DORCHESTER.—*Dorset County Asylum.* Med. Sup., P. W. Macdonald, M.D. Access—Dorchester, 3 miles.

DRUMCONDRA (Co. Dublin).—*Hartfield Retreat.* Med. Prop., Dr. Lynch.

Highfield (for ladies). *Hampstead* (for gentlemen). Med. Prop., John Eustace, M.D.

DUBLIN.—*Bloomfield Retreat*, Donnybrook Road. Med. Sup., Jas. H. Wharton, M.B.

Farnham House and Maryville, 3 miles from Dublin (for 60 patients, both sexes). Prop. and Med. Sup., A. Patten, M.B. Access—Cab from Dublin.

House of St. John of God, Stillorgan. Med. Sup., Dr. McEvoy. Access—Stillorgan Station, ¼ mile. From Dublin 5 miles.

Woodbine Lodge, Bathfarnam, 6 miles (ladies). Prop., Mrs. Hayes.

DUDLEY (Stafford).—*Ashwood House*, Kingswinford, 4 miles from Dudley, 3 from Stourbridge (for 31 upper and middle class patients, male and female). Props., Drs. Peacock & Pietersen. Access—Stourbridge or Dudley Stations. *See page* 635.

DUMFRIES.—*Crichton Royal Institution.* Med. Sup., James Rutherford, M.D., F.R.C.P., E., etc.

Southern Counties Asylum. Med. Sup., J. Rutherford, M.D.

DUNDEE.—*Royal Asylum*, West Green. Med. Sup., Jas. Rorie, M.D. Access—Dundee, 4 miles.

DURHAM.—*County Asylum*, near Durham. Res. Med. Sup., Robert Smith, M.D. Access—Sedgefield Station, 3 miles, thence by 'Bus.

EARLSWOOD.—*Asylum for Idiots.* Res. Med. Sup., Dr. Robert Jones. Males 400, females 200. Admission by election or payment of 50 to 200 guineas per annum. Apply to Sec., 36, King William Street, London Bridge, E.C. Access—Earlswood Station, close to the Asylum; Red Hill Junction, 1½ miles.

EDINBURGH.—*Mavisbank House*, Polton, Midlothian. Res. Med. Sup., John Keay, M.D., M.R.C.P., E. Access—Polton Station, North British Railway, 5 minutes' walk.

Midlothian and Peebles District Asylum. Res. Med. Sup., R. B. Mitchell, M.D. Access—Rosslynlee Station, 1 mile.

Mollendo House, Musselburgh. Prop., P. Mackenzie. Cons. Phys., Thos. R. Scott, M.D. Access—Musselburgh Station, 10 minutes' walk.

Royal Edinburgh Asylum, Morningside. Phys. Sup., T. S. Clouston, M.D., F.R.C.P., E.

Saughton Hall. Res. Med. Sup. and Prop., Dr. John Batty Tuke, M.D., F.R.C.P., E. Access—Gorgie Station, 15 minutes.

EGHAM.—*Holloway Sanatorium*, St. Ann's Heath, Virginia Water. Res. Med. Sup., Sutherland Rees Philipps, M.D. Access—Virginia Water Station, 3 minutes' walk.

ELGIN.—*District Asylum.* Med. Sup., J. W. N. Mackay, M.D.

ENNIS.—*District Asylum.* Res. Med. Sup., Richard Phillips Gelston, L.R.C.S., I., L.R.C.P., I. Access—Ennis Station, 1¾ miles.

ENNISCORTHY (Co. Wexford).—*District Lunatic Asylum.* Res Med. Sup., Thomas Drapes, M.B. Access—Enniscorthy, 1 mile.

EPSOM (Surrey).—*Church Street* (for 14 ladies). Med. Sup., Dr. W. Clement Daniel. Access—Epsom Station, 5 minutes' walk.

EXETER.—*City Asylum*, Heavitree. Res. Med. Sup., R. L. Rutherford, M.D.

Court Hall, Kenton. Mrs. Mules, Proprietress. Access—Starcross, 1 mile.

Devon County Asylum, Exminster. Med. Sup., G. J. S. Saunders, M.D. Access—Exminster Station, 1 mile ; Exeter, 4 miles.

Wonford House (Hospital for the Insane). Res. Med. Sup., P. Maury Deas, M.B., M.S. Lond. Access—Exeter Station, 1½ miles.

See page 635.

FAIRFORD (Gloucestershire).—*Fairford Retreat.* Res. Med. Sup., Daniel Iles, M.R.C.S. Access—Fairford Station.

The Croft House Private Asylum, near Swindon and Cirencester. Med. Sup., Dr. C. H. Bloxsome. Access—Fairford Station.

GATESHEAD.—*Dunston Lodge Asylum*, Newcastle and Gateshead-on-Tyne. Access—Newcastle-on-Tyne Station, 3 miles.

GLASGOW.—*District Asylum.* Med. Sup., A. C. Clark, M.D.

Royal Asylum, Gartnavel. Res. Phy. Sup., D. Yellowlees, M.D., LL.D.

GLOUCESTER.—*Barnwood House.* Res. Med. Sup., F. Needham, M.D. Access—Gloucester, 2 miles.

Gloucester County Lunatic Asylums, Wotton and Barnwood, Gloucester. Res. Med. Sup., F. Hurst Craddock, B.A. Oxon, M.R.C.S. Access—Gloucester Station, 1 mile.

GOUDHURST (Kent).—*Tattlebury House* (for 6 males and 2 females). Med. Sup. and Prop., R. S. Newington, M.R.C.S., L.S.A. Access—Marden Station, 5 miles.

GREAT YARMOUTH.—*Royal Naval Hospital.* Dr. Thomas Browne, R.N., Fleet Surgeon in charge. Access—Great Yarmouth Station, ½ mile. For Naval patients only, admitted by Admiralty order.

HADDINGTON.—*District Asylum*, 17 miles from Edinburgh. Cons. Surg., T. Howden, M.D., L.R.C.S., Maitlandfield. Med. Sup., J. Bruce-Ronaldson, F.R.C.S., E., etc. Access—Haddington Station, 10 minutes' walk.

HARPENDEN (St. Alban's).—*Harpenden Hall*, 4 miles from St. Alban's (for 13 ladies). Prop. and Res. Med. Sup., A. Maclean, L.R.C.S. Ed., L.S.A. Lond. Access—Harpenden Station. *See page* 636.

HATTON (near Warwick).—*County Asylum.* Res. Med. Sup., Alfred Miller, M.B. Access—Hatton Station, 2 miles; Warwick Station, 3 miles.

HAWKHURST (Kent).—*North Grove House*, 15 miles from Hastings and Tunbridge Wells. Phys., W. M. Harmer, F.R.C.P. Access—Etchingham Station, 5 miles; Staplehurst Station, 10 miles.

HAYWARD'S HEATH.—*Sussex County Asylum.* Med. Sup., C. E. Saunders, M.D.

HENLEY-IN-ARDEN (Warwickshire). — *Glendossil and Hurst House* (for both sexes). Res. Prop., Dr. S. H. Agar. Access—Great Western Railway.

HEREFORD.—*County and City Asylum.* Med. Sup., T. A. Chapman, M.D.

HITCHIN (Herts), near.—*Three Counties Asylum.* Res. Med. Sup., E. Swain, L.R.C.P. Access—Three Counties Station, 1 mile.

HULL.—*Borough Asylum.* Med. Sup., J. Merson, M.D. Access—Willerby Station, 1 mile.

Craven Street Retreat, Sculcoates. Prop., J. Brown. Access—Hull, 1 mile.

INVERNESS.—*District Asylum.* Med. Sup., Thos. Aitken, M.D. Access—Inverness, 2½ miles.

IPSWICH.—*Borough Asylum.* Med. Sup., Dr. E. L. Rowe. Access—Ipswich, 2 miles,

ISLE OF MAN.—*Lunatic Asylum*, Union Mills. Med. Sup., W. Richardson, M.D. Access—Douglas, 3 miles.

ISLEWORTH (Middlesex).—*Wyke House.* Prop., E. Sparshall Willett, M.D. Access—Isleworth, Brentford, and Osterley Stations, 1 mile.

JERSEY.—*The Grove.* Prop., Dr. Gandin.

KINGSTON-ON-THAMES.—*Canbury House.* Prop., W. H. Roots, M.R.C.S.

KNOWLE (near Fareham).—*County Asylum.* Med. Sup., T. B. Worthington, M.D.

LANCASTER.—*County Asylum.* Res. Med. Sup., David M. Cassidy, M.D., D.Sc. Access—Lancaster Station.

LEEDS (near Meuston). *West Riding Asylum.* Res. Med. Sup., Dr. McDowall.

LEICESTER.—*Borough Asylum.* Med. Sup., J. E. M. Finch, M.D.

Leicestershire and Rutland Asylum. Res. Med. Sup., Dr. W. H. Higgins.

LETTERKENNY and LONDONDERRY.—*County Donegal Asylum.* Res. Med. Sup., G. W. Hatchell, R.C.S., I. Access—Letterkenny and Lough Swilley Railway, ½ mile.

LEYTON (Essex).—*The Great House.* Prop., Mrs. Davey.

LICHFIELD.—*County Lunatic Asylum*, Burntwood, near Lichfield. Res. Med. Sup., James Beveridge Spence, M.D. Access—Lichfield City Station, 3½ miles; Trent Valley Station, 4½ miles; Hammerwich, 1½ mile.

LINCOLN.—*County Asylum*, Bracebridge. Med. Sup., J. W. Marsh, M.R.C.S.

Lincoln Lunatic Hospital, The Lawn. Res. Med. Sup., Arthur P. Russell, M.R.C.P. Access—Lincoln Station, 1 mile.

LIVERPOOL.—*Shaftesbury House.* Near Liverpool and Southport. Res. Med. Sup., Stanley A. Gill, B.A., M.R.C.P.Lond. Access—Formby Station, ¼ mile distant. *See page* 631.

Tue Brook Villa, 3 miles from Liverpool. Res. Med. Sup., Dr. H. Crawford MacBryan. (For 52 males and females.) Access—Tue Brook Station. *See page* 637.

LONDON.—*Bethlem Royal Hospital*, St. George's Road, London, S.E. Res. Med. Sup., R. Percy Smith, M.D. *See page* 637.

Bethnal House, Cambridge Road, N.E. Res. Med. Sup., J. Kennedy Will, M.D. Access—Railway Station near East London Museum.

Brooke House, Clapton. Med. Props., Dr. H. Monro and Dr. J. O. Adams; Res. Med. Sup., Dr. J. O. Adams. Access—Clapton Station.

Camberwell House, S.E. Med. Sup., J. H. Paul, M.D.

County Asylum, Colney Hatch, N. Med. Sup., W. J. Seward, M.B.

Flower House, Catford Bridge, S.E. Med. Sup., C. A. Mercier, M.B. Access—C. and D. Rly., Beckenham Junc., 1 mile.

Grove Hall, Bow (both sexes). Med. Lics., Mr. Byas and Dr. Mickle. Access—Bow Road and Bow Stations, ⅛ mile.

Halliford House, Sunbury-on-Thames, S.W. Res. Med. Sup., D. R. Edwards, M.D. Access—Sunbury Station, 1¼ mile.

Hayes, Wood End House (ladies). Uxbridge, 3 miles, London, 12 miles. Med. Lic., Dr. H. Stilwell. Access—Hayes Station, 1 mile.

Hayes Park, Hayes, Middlesex, near Uxbridge. Res. Med. Sup., Ed. Benbow and H. F. Winslow, M.D. Access—Hayes Station, 2 miles.

Hendon Grove Asylum, Hendon, Middlesex. Res. Med. Lic., H. Hicks, M.D. Access—By Mid. Rly., Hendon Station, ½ mile, or 'Bus from Swiss Cottage, St. John's Wood, N.W.

Homelea, Hammersmith, W. Prop., Mrs. Buck.

Hoxton House, London, N. Res. Med. Sup., John F. Woods. Access—Shoreditch Station, two minutes' walk; Liverpool Street Station, ten minutes' walk.

London County Asylum, Hanwell, W. Res. Med. Sups., R. R. Alexander, M.D., and J. P. Richards, M.R.C.S.

Manor House, Chiswick, and 37, Albemarle St., W. Lics., Mrs. Tuke and Thos. Seymour Tuke, B.A. Oxon (Res). C. M. Tuke, M.R.C.S., E. Access—Turnham Green Station, ⅓ mile.

Middlesex County Asylum, Banstead, S.E. Med. Sup., T. C. Shaw, M.D.

Middlesex County Asylum, Tooting, S.W. Med. Sup., H. G. Hill, M.R.C.S. Access—Wandsworth Common Station, 1 mile.

Moorcroft House, Hillingdon (males). Uxbridge, 2 miles, London, 13 miles. Med. Lic., Dr. Stilwell. Access—West Drayton Station, 2 miles.

Munster House, Fulham. Prop., G. F. Blandford, M.D.

Newlands House, Tooting, Bee Road, S.W. Prop., Dr. H. Sutherland. Res. Med. Supt., E. T. Hall, M.R.C.S.

Normansfield, Hampton Wick. Prop., J. L. H. Down, M.D.

Northumberland House, Green Lanes, N. Prop., A. H. Stocker, M.D. Res. Med. Sup., John Warnock, M.D. Access—Finsbury Park Station.

Otto House, 47, North End Road, Hammersmith, W. Med. Sup., Dr. H. Sutherland. Access—West Kensington Station, ¼ mile.

Peckham House, Peckham, S.E. Prop., Alonzo H. Stocker, M.D. Med. Sup., Finlay Murchison, M.B. Access—Peckham Rye Station, 10 minutes' walk.

Peterborough House, Fulham. Res. Med. Sup., James Robt. Hill, Access—Parsons' Green or Chelsea Station, 5 minutes' walk.

Royal Indian Asylum, Ealing, W. Res. Med. Sup., Thos. B. Christie, M.D. Access—Ealing Station, 1 mile; Ealing Common Station, ½ mile.

Silverton House, Peckham Rye. Prop., Mrs. A. G. Preston.

St. Luke's Hospital, Old Street, E.C. Med. Sup., G. Mickley, M.B.

Sutherland House, Surbiton, near Kingston-on-Thames (ladies). Res. Med. Sup., Robt. Collum, M.D. Access—Surbiton, ¼ mile.

The Huguenots, East Hill, Wandsworth, S.W. (ladies). Prop., Miss Leech. Access—Clapham Junction Station.

The Priory, Roehampton, S.W., near Richmond. Res. Med. Sup., Dr. W. Wood. Access—Barnes Station, 8 minutes' walk.

The Shrubbery, Southall (females). Prop., Miss H. J. Rosser. Access—Southall Station, ¼ mile.

Vine Cottage, Norwood Green, Southall. Prop., Mrs. Chalk. Access—Southall Station, 1 mile.

MACCLESFIELD.—*Parkside Asylum.* Res. Med. Sup., T. Steele Sheldon, M.B. Lond. Access—Macclesfield Station, 1 mile.

MAIDSTONE.—*Kent County Asylum.* Res. Med. Sup., F. Pritchard Davies, M.D. Access—Maidstone Station, 1½ miles.

West Malling Place (for ladies). *Castle House* and *Winthies Cottage* (for gentlemen). Res. Med. Sup., Dr. James Adam. Access—Malling Station, 1 mile.

MARKET LAVINGTON (Wilts).—*Fiddington House.* Prop. and Med. Sup., C. Hitchcock, M.D. Access—Devizes Station, 6 miles.

See page 635.

MELROSE, N.B.—*Roxburgh District Asylum.* Res. Med. Sup., J. C. Johnstone, M.B. Access—Melrose, 1 mile.

MELTON.—*Suffolk County Asylum*, Melton, near Woodbridge. Res. Phys. and Sup., Wilson Eager, L.R.C.P. Access—Melton Station, 1¼ mile; Woodbridge Station, 2¼ miles.

MONAGHAN (Ireland).—*District Asylum*, Res. Med. Sup., Dr. Edward Taylor. Access—Monaghan, ¼ mile.

MONTROSE, N.B.—*Montrose Royal Lunatic Asylum.* Res. Med. Sup., J. C. Howden, M.D. Access—Hillside Station, ¼ mile; Dubton Station, 1 mile.

MORPETH.—*Northumberland County Asylum.* Res. Med. Sup., Thos. W. McDowall, M.D. Access—Morpeth Station, 1 mile, by 'Bus.

MOULSFORD (Berks).—*Berks County Asylum.* Med. Sup., J. H. Douty, M.R.C.S.

NELSON-IN-MARSDEN (Lanc.).—*Marsden Hall* (for both sexes). Res. Prop., Mrs. Bennett; Med. Sup., Dr. A. P. Millar. Access—Nelson or Colne Stations.

NEWCASTLE-ON-TYNE.—*City County Asylum*, Gosforth. Res. Med. Sup., Jas. Thomas Callcott, M.D. Access—Newcastle, 1 mile.

NEWTON-LE-WILLOWS.—*Haydock Lodge.* Med. Prop., E. H. Beaman, M.R.C.S., E.; Res. Med. Sup., Dr. C. T. Street. Access—Newton-le-Willows Station, 2 miles.

NORTHAMPTON.—*Abington Abbey Retreat*, 1¼ mile to centre of town. Prop., H. S. Prichard. Med. Sup., Geo. H. Percival, M.B. Regular visits every other day, others when necessary. Access—Northampton Stations; and cabs in waiting to convey fares to any part of the neighbourhood. *See page* 634.

Berrywood Asylum. Res. Med. Sup., Dr. R. Greene. Access—Castle Station, 2 miles: Midland Station, 2½ miles.

St. Andrew's Hospital. Med. Sup., J. Bayley, M.R.C.S.

NORWICH.—*Heigham Hall.* Proprietress, Mrs. Watson. Res. Med. Sup., Thos. J. Compton, M.B.

Norfolk County Asylum, Thorpe. Res. Med. Sup., David G. Thomson, M.D. Access—Norwich (Thorpe) Station, 2 miles.

Norwich City Asylum, Hellesdon. Private patients received at low rates. Res. Med. Sup., Dr. Wm. Harris; Hon. Con. Phys., Dr. Bateman, F.R.C.P. Access—Thorpe, cab fare 4/-; Victoria Station, cab fare 3/6; City Station, fare 3/-; Hellesdon Station, ½ mile.

The Bethel Hospital for the Insane. Res. Med. Sup., J. Fielding, M.D.; Con. Phys., Dr. Bateman, F.R.C.P. Access—Thorpe Station, 1 mile.

The Grove, Old Catton, 1 mile (ladies). Props., Mr. and Mrs. T. J. C. Rackham. Med. Sup., C. Williams, F.R.C.S. Access—By carriage.

NOTTINGHAM.—*Borough Asylum*, Mapperley Hill. Med. Sup., E. Powell, M.R.C.S.

County Asylum, Snenton. Res. Med. Sup., Dr. A. Aplin. Access—Mid. and Gt. North. Station, about 15 minutes' walk.

The Coppice. Res. Med. Sup., W. B. Tate, M.D. Access—Mid. and Gt. North. Station, 2½ miles.

OMAGH.—*District Asylum.* Res. Med. Sup., Geo. E. Carre, M.B. Access—Omagh Station, 2 miles.

OXFORD.—*Oxford County Asylum.* Res. Med. Sup., R. H. H. Sankey, M.R.C.S. Access—Littlemore Station.

Warneford Asylum, Oxford 1½ mile (for private patients only). Res. Med. Sup., J. Bywater Ward, M.D. Access—Oxford Station, 2¼ miles.

PERTH.—*District Asylum.* Med. Sup., C. M. Campbell, M.D.

James Murray's Royal Asylum (for private patients only), Perth and Kincarrathie, Scotland. Res. Phys. and Sup., Dr. Urquhart. Access—Perth, under 2 miles. *See page* 633.

PLYMOUTH.—*Plympton House*, Plympton, S. Devon. Res. Med. Sup., Charles Aldridge, M.D. Access—Plympton, 1 mile; Marsh Mills, 2 miles.

PORTSMOUTH.—*Borough Asylum.* Res. Med. Sup., W. C. Bland, M.R.C.S. Access—Fratton Station, 2 miles.

PRESTWICH (near Manchester).—*County Asylum.* Med. Sup., Henry R. Ley, M.R.C.S.

Overdale, Outwood. Prop., Mr. H. B. Lomas; Med. Visitor, James Holmes, M.D. Access—Prestwich, 1½ miles; Molyneux Brow, 1 mile.

See page 632.

RAINHILL (near Prescot).—*County Asylum.* Med. Sup., T. Wigles-worth, M.D.

ROTHERHAM (Yorkshire).—*Grange Hall*, near Rotherham, 5 miles from Sheffield (for ladies). Res. Med. Props., J. G. Atkinson, M.D., and C. Clapham, M.D. Access—Grange Lane Station, ½ mile.

SALISBURY.—*Fisherton House Asylum.* Med. Sup., William Corbin Finch, M.D. Access—Salisbury Station, 5 minutes' walk.

Laverstock House. Prop., J. Haynes; Med. Sup., Hy. J. Manning, M.R.C.S.

SHREWSBURY.—*Salop and Montgomery Counties Lunatic Asylum.* Res. Med. Sup., Arthur Strange, M.D. Access—Shrewsbury Station, 2½ miles.

STAFFORD.—*County Lunatic Asylum.* Res. Med. Sup., Dr. J. W. Stirling Christie. Access—Stafford Station, about 1 mile.

Institution for the Insane. Coton Hill, Med. Sup., Dr. R. W. Hewson.

STARCROSS (near Exeter).—*Western Counties Idiot Asylum.* Res. Sup., William Locke. Access—Starcross Station, 5 minutes' walk.

STIRLING.—*District Asylum.* Med. Sup., Dr. MacPherson.

ST. LEONARDS-ON-SEA.—*Ashbrook Hall*, Hollington (for ladies). Res. Prop., Mrs. Letitia A. Hitch. Access—Station, Warrior Square, St. Leonards-on-Sea, half-an-hour's walk.

STONE (near Aylesbury).—*Bucks County Asylum.* Res. Med. Sup., J. Humphry, M.R.C.S. Access—Stone, 3 miles from Aylesbury.

SUTTON (Surrey).—*Chalk Pit House.* Prop., F. D. Atkins, M.R.C.S.

TAMWORTH (Staffs.).—*The Moat House* (for ladies). Res. Prop., E. Hollins, M.A.

TICEHURST (Sussex).—*Asylum.* Props., H. F. H. Newington, M.R.C.P., and A. S. L. Newington, M.B.

WADSEY (near Sheffield).—*West Riding of Yorkshire Asylum.* Med. Sup., W. S. Kay, M.D.

WAKEFIELD.—*West Riding Asylum.* Res. Med. Sup., Dr. W. B. Lewis.

WELLS.—*Somerset and Bath Asylum*, Wells, Somerset. Res. Med. Sup., A. Law Wade, M.D. Access—Wells, 2 miles; Masbury, 2½ miles.

WHITCHURCH (Salop).—*St. Mary's House.* Med. Sup., S. T. Gwynn, M.D. Access—Whitchurch Station, 1½ miles.

WHITTINGHAM (near Preston).—*County Asylum.* Med. Sup., J. A. Wallis, M.D.

WINCHELSEA (Sussex).—*Periteau House*, near Hastings (ladies). Prop. and Med. Sup., R. V. Skinner, M.R.C.S. Access—Winchelsea Station.

WOKING.—*Surrey County Asylum*, Brookwood. Med. Sup., Dr. J. E. Barton.

WORCESTER.—*County and City Lunatic Asylum*, Powick. Res. Med. Sup., E. Marriott Cooke, M.B. Access—Worcester Station, 4½ miles.

YORK.—*Lawrence House* (for 8 males and 14 females). Prop. and Med. Sup., G. I. Swanson, M.D. Access—York.

Lime Tree House (6 males and 4 females). Res. Med. Sup., W. J. Nelson. Access—York Station, 2 miles, by cab.

North Riding of Yorkshire Asylum. Res. Med. Sup., J. Tregelles Hingston. Access—York, 2 miles.

The Friends' Retreat. Med. Sup., R. Baker, M.D.

York Lunatic Asylum, Bootham. Res. Med. Sup., C. K. Hitchcock, M.D., M.A. Cantab. Access—York, 1 mile. *See page* 637.

TRAINING INSTITUTIONS.

CHILCOMPTON (near Bath).—*Downside Lodge.* Med. Sup., Alex. Waugh, M.D. Access—Chilcompton Station, about ¼ mile. *See page* 634.

KINGSTON-ON-THAMES.—Normansfield Training Institution (for backward and feeble-minded children). Med. Sup., Dr. Langdon Down. For 100 male and 60 female patients of the upper class. Access—Hampton Wick Station, 5 minutes' walk.

LANCASTER.—*Royal Albert Asylum* (for idiots and imbeciles of the Northern counties. For 600 patients). Res. Med. Sup., G. E. Shuttleworth, B.A., M.D.; Sec., James Diggens. Admission by election, or at various rates of payment. Access—Lancaster Station, 1 mile. *See page* 630.

Brunton House, a home for special private pupils under training at the Royal Albert Asylum. Sec., James Diggens. Access as above.

Homes for Inebriates.

Formalities necessary before the reception of a patient (under the Inebriates' Acts of 1879 and 1888) into the Homes marked with an asterisk.

The patient must sign a Form expressing a wish to enter the retreat, before two magistrates (who need not be Magistrates for the County in which the signature takes place). This can be done at the private residence of the patient, or on arrival at the retreat. Two friends of the patient must also sign a statutory declaration that they consider the patient an "Inebriate" within the meaning of the Acts.

BRISTOL.—*Dunmurry*, Sneyd Park, near Clifton. Res. Med. Prop., Dr. James Stewart, B.A., F.R.C.P. Ed. Access—Bristol or Clifton Down Stations, 1¼ mile from the latter. *See page* 638.

Kingswood Park (for gentlemen); *Leigh House* (for ladies). Med. Attendant, H. Grace, L.R.C.P.; Cons. Phys., Owen Pritchard, M.D. Access—Mangotsfield or Bristol Stations, direct by carriage.

CROYDON.—*St. Raphael's*, Woodside. Apply Rev. A. Tooth.

DUNVEGAN (Isle of Skye).—*Kinlock*. Res. Prop., Dr. John Maclean. Est. 1854. Access—Dunara Castle and Hebridian Steamers to Dunvegan from Glasgow, and Highland Rly. to Strome.

EARL'S COLNE (Essex).—*Buxton House* (for ladies). Prop., Miss Pudney; Med. Attendant, J. Taylor, M.R.C.S.

LEICESTER.—*Tower House* (for ladies). Prop., Mrs. Theobald; Med. Attendant, Dr. J. St. T. Clarke.

LONDON.—**High Shot House*, Twickenham, S.W. Licensee, Mr. C. J. Boorne. Med. Attendants, Drs. Leeson and Bolton. Access—St. Margaret's Station from Waterloo.

RICKMANSWORTH (Herts).—**Dalrymple Home* (for 20 male patients). Res. Med. Sup., R. Welsh Branthwaite, L.R.C.P. Access—Rickmansworth Station, Metropolitan Rly., ½ mile; L. & N.W. Rly., 1 mile.

STONEHAVEN (N.B.).—*Elsick House*. Prop., D. Forbes.

WALSALL.—**Old Park Hall Retreat*. Birmingham, 6 miles. Res. Med. Sup., Fredk. John Gray. Access—Walsall Station, 1¾ mile.

WESTGATE-ON-SEA.—**Tower House Retreat* (for ladies and gentlemen). Prop., Mr. J. H. Brown; Con. Phys., A. F. Street, M.D.

Hydropathic Establishments of Great Britain.

We wish to make this list complete, but it is impossible when some Proprietors do not return our letter of enquiry which is *stamped for reply.* This will account for some omissions in the present edition.

ABERDEEN.—*Deeside Hydropathic Establishment*, Heathcot, near Aberdeen.—Res. Med. Sup., Alexander Stewart, M.D., LL.D., F.A.S. Access—Rail to Aberdeen, thence by cab or omnibus. Hydropathic conveyance meets any train when sent for, distance 5 miles.

See page 640.

BASLOW (near Chesterfield). *Baslow Hydropathic Establishment*, near Chatsworth Park, Derbyshire. Res. Med. Sup., E. M. Wrench, F.R.C.S. Access—Rowsley Station, 4½ miles.

BATH.—*West of England Hydropathic Establishment*, Limpley Stoke, near Bath. Res. Phys., C. Hemming, M.D. Access—Limpley Stoke Station.

BEN RHYDDING.—*Ben Rhydding.* Near Leeds, Bradford, or Harrogate. Phys., Thos. Johnston, M.D., M.R.C.P. Access—Ben Rhydding Station, a few hundred yards.

BISHOPS-TEIGNTON (near Teignmouth).—*The South Devon Health Resort.* Prop., C. F. Carpenter. Med. Sup., R. D. Broughton, M.R.C.S. Access—Teignmouth Station, 2½ miles.

BORTH (Cardiganshire).—*Hydropathic Establishment.* Med. Sup., J. Harden Jones, M.R.C.S.

BOURNEMOUTH (Hampshire).—*Bourne Hall*, a residence under medical direction (not a Hydropathic or confirmed Invalid Establishment). Res. Phys., Ed. P. Philpots, M.D. Access—Bournemouth, West Station, 1 minute's walk.

Bournemouth Hydropathic Establishment. Res. Prop., James Osborne, M.D. Access—Bournemouth, East Station, 1 mile; West Station, ¼ mile.

BRIDGE OF ALLAN.—*Bridge of Allan Hydropathic Co.* Manager, J. Mackay. Access—Bridge of Allan Station, ½ mile.

BRISTOL.—*Bartholomew's Turkish Bath and Hydropathic Sanatorium*, College Green. Res. Med. Sup., W. J. Spoor, M.B.

BUTE.—*Kyles of Bute Hydropathic*, Port Bannantyne. Sec., D. H. Jack ; Med. Sup., Dr. A. J. Hall. Access—Clyde Steamers call in summer.

BUXTON.—*Buxton House Hydropathic*, adjoins "The Peak Hydro." Res. Phys., S. Hyde, L.R.C.P., M.R.C.S. Distance from Station, 4 minutes.

The Peak Hydro-Thermal Establishment. Manageress, Mrs. MacGregor ; Phys., S. Hyde, L.R.C.P., M.R.C.S. 4 minutes from Station. *See page* 639.

Buxton Hydropathic and Winter Residence. Prop., Mr. Lomas. Access—Buxton Station, 4 minutes' walk.

CALLANDER.—*The Callander and Trossachs Hydropathic*, Callander. Sup., Miss Thompson. Access—Callander Station, 1 mile, and 'Bus awaits all trains.

COLWYN BAY (North Wales).—*Colwyn Bay Hydropathic and Winter Residence.* Med. Sup., Dr. M. V. Williams. Access—Colwyn Bay Station, 7 minutes' walk.

CORK.—*St. Ann's Hill Hydropathic.* Res. Phys., M. Altdorfer, M.D. Access—Blarney Station, 2½ miles distant ; Muskerry Light Ry. from Cork, Station on grounds. *See page* 642.

CRIEFF.—*Strathearn House* (17 miles from Perth). Res. Med. Sup., Thos. H. Meikle, M.D., J.P. Access—Crieff Station, 1 mile.

DUNBLANE.—*Dunblane Hydropathic*, Stirling. Vis. Med. Sup., Dr. Thos. Brown. Access—Dunblane Station, 1 mile.

EDINBURGH.—*Craiglockhart Hydropathic.* Man., Jas. Drummond.

FARNBOROUGH (Hants).—*The Pine Therapeutic Establishment.* Apply to the Secretary.

FOLKESTONE.—*Capel Lodge.* (Near Folkestone.) Prop., E. Norton, M.D. Access—Folkestone Junction, 2 miles.

Folkestone Bathing Establishment Co., Limited. Access—Shorncliff, Radnor Park, and Junction Stations.

FORRES.—*Cluny Hill Hydropathic.* Res. Man. R. Bond ; Vis. Phys., Dr. Leslie H. Milne. Access—Forres Station, 1 mile ; Inverness, 24 miles.

GRANGE-OVER-SANDS.—*Hazelwood Hydropathic.* Con. Phys., Dr. Anderson. *See page* 641.

HARROGATE (Yorkshire).—*The Harrogate Hydropathic Establishment.* Med. Sup., Geo. Tennant, M.B.

The Imperial Sanatorium and Electropathic Establishment, Royal Parade. Res. Med. Officer, J. R. Tunmer, M.R.C.S., E., etc.

HASTINGS (St. Leonard's).—*The Spa Hydropathic Establishment.* Access—Hastings Station, 1 mile.

Metcalfe's Hydropathic Establishment, Wellington Square.

HEXHAM (Northumberland).—*Tynedale Hydropathic.* Prop., F. G. Grant; Med. Sup., Thos. Stainthorpe, M.D. Access—Hexham; Newcastle, 19 miles.

ILKLEY (Yorkshire).—*Craiglands Hydropathic.* Props., Dobson Bros. Med. Sup., Henry Dobson, M.D., C.M.

Ilkley Wells House Hydropathic. Med. Sup., Thos. Scott, M.D. Access—Ilkley Station, ¼ mile.

The Spa Hydropathic. (Near Leeds and Bradford.) Med. Sup., Thos. Johnstone, M.D. Access—Ilkley, Yorks and Mid. Rys.

Troutbeck Hydropathic Establishment and Sanatorium. Res. Med. Sup., Henry Dobson, M.D., C.M. Props., Dobson Bros.

KILMALCOLM (Renfrewshire).—*Hydropathic Establishment.* Access—Greenock, 7 miles, thence by steamer.

LLANDUDNO (North Wales).—*Hydropathic and Winter Residence.* Res. Med. Sup., H. Thomas, M.D., F.R.M.S. Access—Llandudno Station, 5 minutes.

The Sanatorium. Med. Sups., Drs. Bold Williams, Dalton, Davies and Craig. Access—Llandudno Station, 10 minutes.

MALVERN.—*Dr. Rayner's Hydropathic.* Res. Phys., T. Rayner, M.D. Access—Great Malvern Station, ½ mile.

Wyche-side Hydropathic. Res. Phys., Dr. Grindrod.

MATLOCK.—*Bridge Hall.* Prop., R. Nicholson. Access—Matlock Bridge Station.

Darley Dale Hydropathic. Prop., Wm. Atkin; Med. Sup., Dr. W. Moxon. Access—Matlock Bridge Station, 2 miles; Darley Dale, ¼ mile.

Elm Tree House. Prop., Wm. Bramald. Med. Sup., Dr. Hunter. Access—Matlock Bridge Station, ½ mile.

Jackson House, Matlock Bank, Matlock Bridge. Med. Sup., Dr. Moxon. Prop., Mr. J. L. Dean. Access—Near Matlock Bridge Station.

Smedley's Hydropathic Establishment, Matlock Bridge. Phys., Wm. B. Hunter, M.D., and (Res.) W. C. Sharpe, M.B. Access—Matlock Bridge Station, ½ mile; Omnibus. *See page* 641.

The Clarence, Matlock Bath, close to Station. Prop., R. Nicholson.

MELROSE.—*Waverley Hydropathic.* Med. Sup., Dr. Somerville. Access—Melrose Station, 1 mile.

MOFFAT.—*The Moffat Hydropathic.* Prop., J. Farquharson.

NORWOOD.—*Beulah Spa.* Prop., C. Barker.

PEEBLES.—*Peebles Hydropathic.* Access—Peebles Stations, 1 mile.

PITLOCHRY.—*Athole Hydropathic.* Prop., W. Macdonald.

REDCAR (Yorkshire).—Prop., Mrs. Poole ; Med. Sup., Dr. W. A. Day.

RHYL.—*North Wales Hydropathic.* Phys. Dr. W. Thomas.

ROTHESAY (Bute).—*Glenburn Hydropathic.* Res. Prop., Dr. Philp. *See page* 640.

SCARBOROUGH—*Hydropathic Establishment*, Seamer Road. Prop., R. B. D. Wells.

SHANDON (by Helensburgh).—*Shandon Hydropathic.* Access—Steamer to Shandon Pier.

SOUTHPORT.—*Southport "Sunnyside" Hydropathic.* Phys., Dr. F. A. Ernest Barnardo. Access—Southport Station, 1 mile, and Birkdale Station, ¼ mile.

The Limes Hydropathic (near Promenade). Access—Chapel Street, Lord Street or Central Stations.

TORQUAY.—*The Torquay Hydropathic.* Access—Torquay Station, 1 mile.

TUNBRIDGE WELLS.—*The Spa.* Phys., Dr. G. L. Pardington. Access—Tunbridge Station, about ½ mile. *See page* 641.

ULVERSTON AND BARROW-IN-FURNESS.—*Conishead Priory Hydropathic.* Access—Carnforth or Hellifield Stations.

WATFORD.—*The Hall*, Bushey. Res. Phys. and Med. Sup., R. J. Banning, M.D., J.P. Access—Bushey Station, 1 mile.

WEMYSS BAY.—*Wemyss Bay Hydropathic.* Med. Sup., Ronald Currie, M.D., C.M. Access—Wemyss Bay Station, *via* Glasgow, ½ mile.

WINDERMERE.—*Windermere Hydropathic*, 9 miles from Kendal. Access—Windermere Station, about 1 mile. Furness (Bowness Landing), ¼ mile.

Private Homes for Invalids.

BOURNEMOUTH.—*Overton Hall*, West Cliff. Res. Prop., Dr. M. Watson.

JEDBURGH.—*Abbey Green.* Res. Prop., Wm. Blair, M.D. Access—N. B. Rly., Jedburgh. *See page* 634.

New Inventions, Improvements in Pharmacy, and Dietetic Preparations.

ALTHOUGH the productions submitted to us during the year have not been remarkable for any extraordinary novelty, they exhibit marked signs of the steady progress which has been made as regards elegance in the preparation of medicines, and convenience and economy in the manufacture of instruments and appliances.

The labours of those who dispense their own medicines must be greatly lightened by the preparations which the leading firms of druggists place at their disposal, and the results are undoubtedly more pleasing to the patient.

The distinct tendency of modern pharmacy is to produce medicines in small bulk, the doses of which are already divided, in the form of pills, tabloids, pellets, tabellæ, palatinoids, etc. This arrangement permits a large assortment of medicinal agents to be carried in the pocket or in the carriage, so that the medicine is ready to hand in cases of urgency, while among those who dispense their own medicines, it is possible to carry out the operation at the house of the patient. The various concentrated liquors, tinctures, and liquid extracts is another method by which the work of dispensing is facilitated.

In providing the practitioner with the instruments and appliances needed in his work, the large wholesale druggists are again to the fore, and it is impossible not to contrast the difference in price between such articles now and the cost of similar ones some years ago. We are aware of the general rule against quoting the price of an article in writing a press notice of it, but we never hesitate to break through this rule when we consider that the small cost is one of the distinct advantages connected with the production.

There used to be a strong conviction among the medical trades that it was useless to try and manufacture little appliances only useful to the medical profession at a small price, because the expense of making them known was so great. It has been our object during the past nine years to assist manufacturers in bringing such productions before the notice of the profession at no expense to themselves, and by doing so we know that we have served the interests of both. We do not wish to claim any merit for the improvement which has taken place in the medical supply department, but there is evidence to show that the

firms who have adopted the policy which we have so long advocated, are now the chief producers of novel and economical appliances, and this would not be the case if the manufacture was unprofitable.

We shall be happy to receive suggestions from the readers of the "Annual" respecting any appliances which they think may be improved or added to our list. Some of the productions noticed here are the result of such suggestions, and we have to thank the manufacturers for the attention which they have given to them.

SURGICAL APPLIANCES AND DRESSINGS.

Accouchement Sheet.—Under this name Robinson & Sons, of Chesterfield, manufacture a soft wool material over an inch in thickness. This is prepared on one side so that it prevents the discharges, which it absorbs, from penetrating to the surface on which it is placed without the use of a waterproof sheet. There can be no question of the greater comfort which this sheeting affords over the arrangements generally adopted in such cases, and the same material is eminently suitable for operation in private houses. It can be manufactured in any size from three yards long and forty-two inches wide, downwards.

Atmospheric Gas Jet.—This is a little gas jet which can be fixed to any ordinary burner, and which will then give an illuminating flame, a bunsen or blow-pipe flame, according to the quantity of air admitted. The appliance is produced at a very small cost, and will form an addition to the surgery of intrinsic value. It is produced by Charles Thompson, Sparkbrook, Birmingham.

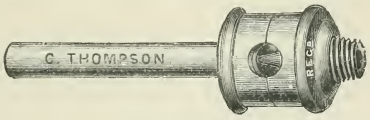

Fig. 48.

Bandages.—A new selvedge bandage, seven inches wide, is produced by A. de St. Dalmas, Leicester. It is intended as a thoracic or abdominal support, and will prove useful for various requirements in surgical cases. The material is porous and will allow of slight stretching, but is not too elastic for the purposes intended.

Catheter (Female).—The peculiarity of this catheter is the material of which it is manufactured. This is transparent celluloid. It has the advantage of being easily cleaned, and also that one can readily see when it is clean owing to the fact that it is perfectly transparent. R. Sumner & Co., of Liverpool, are the manufacturers.

Chloride of Silver Batteries, New.—The batteries recently introduced by Mr. Schall, of Wigmore Street, London, have every likelihood of entirely superseding both the Leclanché and Bichromate. The cells are smaller, lighter, and more portable than either of these forms, and they are so arranged that it is almost impossible to spill the liquid in them. There is no chemical action while the circuit is open, and they may be left idle for months without either evaporation of the liquid or the formation of crystals. They appear to possess many intrinsic advantages, but as it is essential in judging of the value of any form of battery to know if it stands the test of time, we have referred to Dr. W. B. Colquhoun, who has used the chloride of silver battery since its introduction. Although the pressure on our space prevents us from publishing his very able and detailed report, we are glad to find that it is wholly satisfactory, and we have quite decided to adopt them for our own use.

Disinfectant Distributor.—This appliance consists of a small earthenware vessel containing disinfecting material. It is intended to stand in the cistern connected with the W.C., and being arranged on the syphon principle, a sufficient quantity of disinfectant is discharged each time the pan is flushed. It provides a useful and economical method of ensuring the use of a disinfectant in places where it is necessary in the least troublesome manner possible. It is the invention of Mr. Harris Philpots, of Birkenhead.

Exorrhoid.—Messrs. Richardson & Co., of Leicester, send a collapsible tube, with rectal pipe, containing an ointment, to which they have given the above name. It contains hamamelis, opium, and tannic acid, and is intended for the treatment of piles. In cases for which this combination is indicated, it forms a most convenient and certain method of applying the medicinal agent.

Fig. 49.

Hypodermic Case. — This case is named by the makers, R. Sumner and Co., "The Excelsior." It contains a beautifully made syringe (electro-plated), four hypodermic needles, and four bottles for holding the solutions to be used. These bottles

are fitted with metal screw tops, which can be removed for re-charging with the solutions, but when requiring for filling the syringe it is necessary to remove a small metal plug at the end, and introduce the needle into the bottles. The name of the solution is very clearly marked on each bottle.

The advantage of having a separate needle for each solution in ordinary use appears to us to be very great, as this is the most difficult part to keep clean.

The whole is packed in a neat velvet lined case of convenient size for the pocket. We think it would be difficult to find a case which has so many practical advantages at the same price as this one, and we can highly recommend it to our readers.

Hypodermic Syringe (Koch's).—The advantage offered by the syringe used by Prof. Koch for injecting his remedy is that having no piston, it can easily be kept aseptic by the use of absolute alcohol or a stream of water.

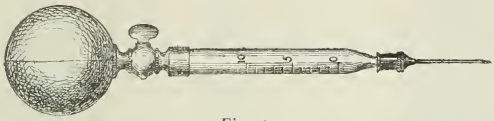

Fig. 50.

The fluid is ejected by means of a perforated india-rubber ball at the end of the syringe. The instrument sent us by Ferris & Co., of Bristol, has had the approval of Prof. Koch, and its manufacture does credit to the firm, every part being thoroughly well made. It is supplied in a neat leather case with two hypodermic needles. We think that it will prove a very useful syringe for general use in hospitals. It would be almost impossible for it to get out of order.

Inhalers.—Under the name of "The Regulating Inhaler," Khrone and Sesemann have introduced an improvement upon Junker's inhaler for the administration of chloroform or ether—an instrument which does not appear to be as well known to the general body of the profession as it deserves to be.

By this instrument the supply of vapour to the patient is entirely under the control of the administrator, and any risk of burning the face by the direct contact of the anæsthetic agent is entirely obviated. The following illustration will explain the nature of the apparatus which consists of three parts :—

A bottle holding about 2 ozs., closed by an air-tight fitting top, through which two tubes are made to pass, a long one connected with

a Richardson's bellows, and a short one, connected by means of india-rubber tubing to a vulcanite facepiece.

The bottle or receiver of the anæsthetic fluid is covered with leather, and the lower half is graduated for 8 drachms.

The facepiece, which covers both nose and mouth, is provided with Krohne & Sesemann's Respiration Indicator (B, *Fig.* 51), by which the character of the patient's respiration is constantly observed by the administrator.

A graduated stopcock is inserted between the bellows and the bottle by means of which the current of air is made to pass *continuously* through the chloroform in the bottle, and for regulating the strength of the vapour to be administered.

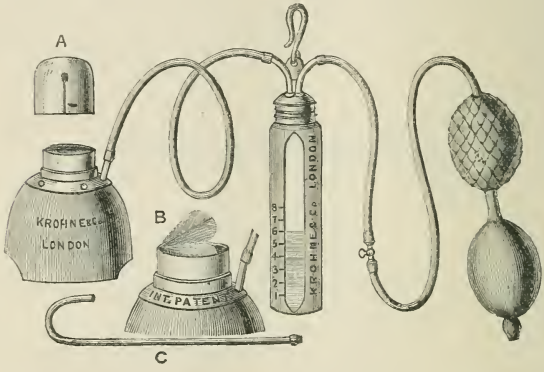

Fig. 51.

When using the apparatus, the bottle has put into it from 4 to 7 drachms of chloroform, according to the expected duration of the operation ; it is then suspended from the first button-hole of the coat of the administrator.

By one complete compression of the bellows 5·19 cubic inches of fresh air are forced through the long tube into the chloroform, and escape impregnated with the vapour of about one minim, or a trifle more than one cubic inch of the vapour through the short tube into the facepiece, from whence it is inhaled.

For operations in the mouth, nose, face or eyes, a pliable metal tube (C, *Fig.* 51) is supplied (which is substituted for the facepiece after com-

plete anæsthesia is established) by means of which anæsthesia can be maintained through the mouth or nose, out of the way of the operator.

Having used this apparatus we cannot speak too highly of the great advantages it offers over the ordinary method of administering chloroform on a towel or linen-fold, a method to which we should be sorry to return. The movements of the respiration-indicator relieves the practitioner of all trouble in respect to the patient's condition, the air of the room does not become saturated with the anæsthetic, because the quantity used is remarkably less than ordinarily required.

There is a feeling of certainty and definite control over every point connected with the administration which is most satisfactory, and the time occupied in producing complete anæsthesia is greatly shortened.

We can strongly recommend this appliance to our readers, the older form of which has been in use by Sir Spencer Wells and the surgeons of the Samaritan Hospital for many years.

Inhaler (Pocket).—This is a little appliance for the inhalation of menthol and pinol, and other volatile bodies used in throat affections. It can be conveniently carried in the pocket. The construction is simple but effective, and it is in every way convenient for use. We can appreciate the ingenuity of the contrivance because we have had several similar appliances made for our own use, and we are a little vexed that the same idea did not occur to us. We think, however, that the inner tube with which the medicament is in contact, would be preferably made of glass instead of metal—a small alteration very easy to effect. Messrs. Burroughs, Wellcome & Co. are the manufacturers.

Fig. 52.

Iodoform Dredger (Pocket).—This is a useful little appliance for surgeons, very neatly made in vulcanite, and costs a shilling. It can be carried in the pocket or dressing case, and enables the surface of a wound to be dusted with iodoform with the least possible inconvenience. Sumner & Co., of Liverpool.

Medicine Case (Pocket).—Messrs. Ferris & Co. have introduced a neat little leather case capable of holding six bottles (5¾ by 3 inches). It is intended for carrying such pills as may be needed for ordinary use. The extremely small size of their "pilulæ parvæ" enables a large number of doses to be placed in each of the little bottles. The advantage in general or country practice of having some medicines ready for immediate administration is obvious, and the number of practitioners who make such provision for their patients is steadily increasing. The case is not a flimsy affair, put together for exhibiting druggists' samples, but a solid, well-constructed article, intended to stand many years of

hard daily wear. We have carried such cases for many years and know their value.

Midwifery Forceps.—The time when surgical instruments were a possible source of infection by want of attention to cleanliness has passed away, and the practitioner insists on being furnished with instruments which it is possible to keep chemically clean. One of the results of this is that the wooden handles must disappear from the forceps of the future.

The conditions under which they are used render them particularly liable to absorb infectious matter, and there is good reason why they should be made entirely of metal. In the specimen of the new forceps sent us by Messrs. Sumner & Co., of Liverpool, we have been particularly anxious to test whether the "grip" on a metal handle would be efficient. We put this point to a severe test, and the result was satisfactory. The handles are hollow, so that the weight of the instrument is not increased.

The shape of the instrument is a very happy combination of Barnes' and Simpson's forceps. We think that practitioners purchasing midwifery forceps would do well to examine these, which are undoubtedly far in advance of the ordinary instruments.

Protective Lint.—This was briefly alluded to in our last issue, but the experience gained since with it has demonstrated its great convenience and practicability so absolutely that we feel no hesitation in directing attention to it. The lint has a protective coating on one side so that it is impermeable to fluids and ointments, and the use of oil-silk, surgeons' sheeting, etc., is entirely dispensed with. Instead of cutting two materials to fit the surface of a wound, and having to adapt them so that they retain their position, the protective lint is alone sufficient. It saves time and it is economical, and our readers will do well to use it. It is manufactured by the Liverpool Lint Co., but it must be ordered through the trade.

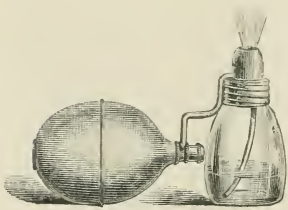

Fig. 53.

Sprays for Throat and Nose.—Under the name of the **Ointment Atomizer,** Burroughs, Wellcome and Co. have supplied a much needed appliance for throwing atomized ointments and oils upon the mucous membranes of the air-passages. The value attached to this mode of treatment is referred to in the "Dictionary of New Treatment," and all we need say

here is that it is the first appliance yet produced which will accomplish the operation in a satisfactory manner. This opinion is shared by eminent laryngologists.

Upon the introduction of the **Throat Spray with Tongue Depressor** the only objection we found to an appliance which offered so many advantages over the older forms was that the tubes were made of metal, and this under the action of nitrate of silver and other substances used in solution for spraying the throat, oxidized. We suggested that vulcanite would be better in every way, and Messrs. Sumner & Co., of Liverpool, have produced a spray which fully accords with our views. It is very effective as a tongue depressor, possessing a level surface and reaching back to the root of the tongue, strong and well made, and throws a very fine spray. It is the most satisfactory form of throat spray that has yet come under our notice.

The steam spray of Seigle, as improved by R. Sumner & Co., of Liverpool, is one of the cheapest medical appliances which has come under our notice. The illustration will show the general improvements on the older forms. The apparatus being on one stand, which can be lifted bodily while the spray is at work; is a great convenience the fixation of the mouthpiece by a support instead of it being necessary to hold it in the hand is another advantage. The spray tubes are of metal instead of glass, and they are fixed to the boiler by a very ingenious piece of mechanism which much simplifies the use of the apparatus. The glass vessel for holding the spray solution is so shaped that it can be more easily cleaned than the bottles usually supplied, and this stands in a metal cup (which is not properly shown in the illustration) and is so shaped that it readily collects any portion of the spray which may be thrown back by impaction against the glass cylinder. In the whole manufacture there is a remarkable attention to detail, and considering that this is supplied in tin for half-a-crown, and nickel-plated for two shillings

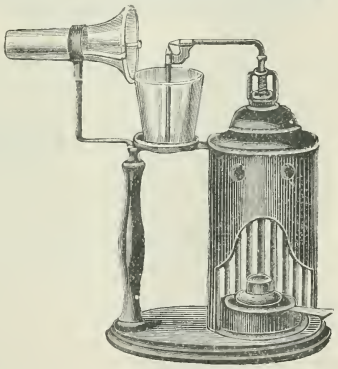

Fig. 54.

more, we think that the firm are entitled to a great deal of credit for the production.

Sponge-Holder.—This is an inexpensive but extremely well made instrument for passing a sponge through the speculum in uterine operations, etc. Sumner & Co., Liverpool, are the manufacturers.

Sumner's Consulting Room Couch.—This is a most useful and ornamental piece of furniture for the consulting room. It is constructed with an instrument cupboard opening upon either side, so that it may be placed to any wall. The mattress and wedge pillow are well stuffed and covered with American cloth. Length, 6-ft. 2-in.; width, 2-ft.; height from ground, as required.

Surgical Basins.—A set of four basins for surgical use made in papier machè have been sent us by Messrs. Sumner and Co. They are kidney-shaped and easily adapt themselves to any part of the body. They appear to us to be remarkably cheap, costing less than a shilling a-piece. The same firm send a catheter dish, designed for washing and rendering these instruments aseptic. It is also made in vulcanite and will prove an useful appliance for immersing most instruments used in surgery. Papier machè appears to be the best possible material for these surgical basins, and we have no doubt of their durability.

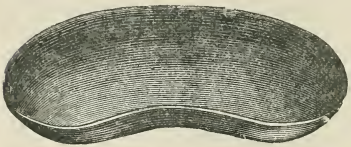

Fig. 55.

Fig. 56.

Surgical Dressings.—Some samples sent us by Messrs. Robinson and Sons, Wheat Bridge Mills, Chesterfield, suggest to us some economies which might be practised in both hospital and surgery practice in the matter of cotton wools, lints, etc. They send us no less than eleven samples of cotton wool ranging from "common grey" to "supra-absorbent," and varying in price accordingly. The "common grey" is very cheap, and is good enough for the purpose of making pads for splints, etc., while the "medium grey" is as soft as the best cotton-wool that is sold, although it costs less than half the price, the practical difference being that it is not bleached. For all purposes except when absorbent wool is required, this might be stocked. It is much softer than the commoner varieties of "white" wool. Of the four varieties of white absorbent wool, we think the sample marked "seconds" will meet every ordinary purpose required, and where only

one variety is kept it may be used on all occasions, as we find that its cost is about a third of that we ordinarily pay for absorbent wool. Of lint we have no less than nine varieties. Of these the variety marked XSS, one pound of which equals forty-three square feet, seems suitable for any purpose for which a thin lint is required, while for heavier lint that marked X would be better (thirty-one square feet to one pound). The flax lints, which are somewhat higher in price, are beautiful productions. The antiseptic wools, lints and gauzes which they prepare in various strengths appear to be manufactured with great care. All the ordinary antiseptics are represented.

We can commend these productions to the notice of those of our readers who may be concerned in the use of dressings in large quantities, as we think the very wide assortment of qualities will enable considerable economy to be practised.

Surgical Table.—A patent portable field operating table has been produced by Evans & Wormull, and is improved by Mr. G. D. Pollock. It is also intended for use by surgeons in private houses where no convenient appliance is accessible. It weighs about twenty-five lbs.,

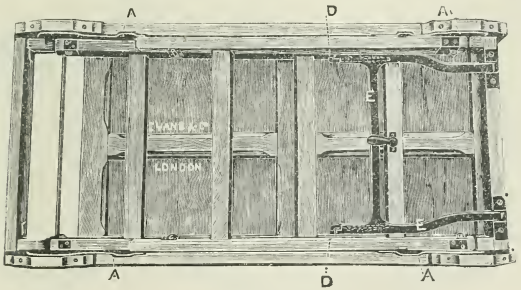

Fig. 57.

and when open is seventy-two inches long and twenty inches wide. The top is divided into three pieces, the upper and lower part of which can be fixed at any angle required. This table should prove very useful for the purpose for which it is intended.

The Wallich's Improved Inhaler.—This appliance will be chiefly used for the inhalation of medicated steam, although it is also adapted for cold inhalations. It is of simple but ingenious construction, the steam passing through a sponge saturated with the terebene, pinol, or other essential oil before reaching the mouth.

Fig. 58.

We have employed it in the case of a distinguished scientist, who pronounces it the best form of steam inhaler he has used. Two practical points suggest themselves as the result of the trial: the first is that the vessel should not be more than half filled with the hot water, and the second is that the sponge instead of being pushed up into the glass receptacle, as shown in the illustration, should only be inserted at the aperture.

The temperature of the water should be from 140° to 150° F. Steam inhalations are of great value both in acute and chronic affections of the larynx and lungs, both on account of their soothing and antiseptic effect, and the assistance they give in expectorating catarrhal products.

Tongue Depressor (Pocket).—This is a very strongly made tongue depressor adapted to lay flat in the waistcoat pocket. We think it would be improved by being made half an inch longer, but it is very serviceable and will meet every ordinary purpose. Sumner & Co., Liverpool, are the manufacturers.

Fig. 59.

Uterine Douches.—Bozeman's Uterine Douche is a very ingenious appliance and appears to be specially designed to prevent the impact of the fluid from directly affecting the sensitive mucous membrane of the uterine cavity. It is easy of introduction, and being made entirely of transparent celluloid it is easily kept clean. We think, however,

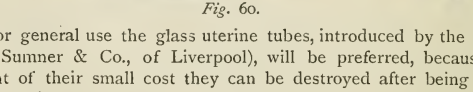

Fig. 60.

that for general use the glass uterine tubes, introduced by the same firm (Sumner & Co., of Liverpool), will be preferred, because on account of their small cost they can be destroyed after being used in an infectious case. Either of these will fit on to an ordinary enema syringe.

Vereker's Chloride of Ammonium Inhaler (Improved).—The improved form of this inhaler sent us by Burroughs, Wellcome & Co.,

leaves nothing to be desired as a practical appliance. The whole apparatus fits into a box which would look quite handsome if Messrs. B. W. & Co. had not adorned the front of it with their name and other particulars; but it covers in every part of the apparatus from the dust, and when it is required for use, the box has only to be opened, and everything is in its place. There is no packing up and unpacking, consequently no bother. We wish we could say the same of every appliance we have to use.

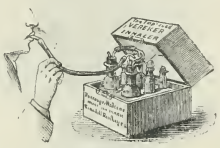

Fig. 61.

SANITARY APPLIANCES.

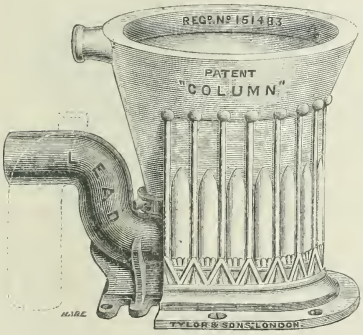

Fig. 62.—THE "COLUMN."

Messrs. J. Tylor and Sons, Limited, Sanitary Engineers, of 2, Newgate Street, London, E.C., make a very good pattern of pedestal closet of the "wash-down" type, which is in practice found to be at once one of the simplest and most effective type of closet in the market. This closet is made of earthenware with lead trap beneath, joined to the earthenware basin by a simple brass collar; and as this joint between earthenware and metal—always a difficult joint to make—is *above* the trap, there can be no danger of sewer gas entering the house through careless fixing. This constitutes a real improvement upon the ordinary pattern, in which the joint of earthenware and metal has to be made *below* the trap. This closet is besides of good appearance and reasonable cost.

The same firm make an improved "retained after flush" waste preventing cistern, by which the sealing of the closet by the retained flush is rendered certain, and thus a very common trouble in connection with pan and syphon closets is effectually prevented.

Messrs. Tylor also bring to our notice useful and well designed requisites for many departments of sanitary work—improved designs for public urinals, enamelled iron unenclosed baths, spray baths and needle baths of improved design, cast iron and earthenware closet ranges for schools, and other well-considered sanitary fittings, in the structure of which their long experience has been fully taken advantage of.

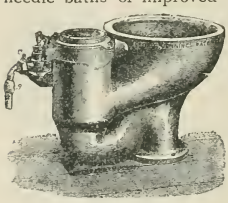

Fig. 63.

Valve closets still retain a considerable share of favour, and Messrs. Jennings, Stangate, London, now make their patent valve water closets with much simplified arrangements for replacing the rubber seating, and for regulating the exact amount of water supply to the basin.

The same firm make also the "pedestal vase" closet, an effective pattern of the "wash out" type, which proves satisfactory in cases where the flush is sufficient and well directed. Carefully conducted experiments have shown the action of the "Jenning's" flush to be very effectual in securing thorough removal of all contents from the pan and through the trap.

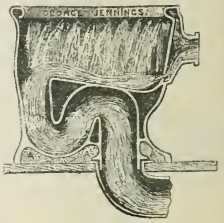

Fig. 64.

A noteworthy introduction of this firm too is the patent "London" ventilating, *warm fresh air* grate, for slow or quick combustion, possessing excellent qualities. It is made in terra-cotta, with the back constructed as a hollow chamber, drawing supplies of pure outside air, which is heated by the fire during its passage through this chamber until finally passed into the room in a constant current of pure warmed air, not vitiated or rendered unwholesome by contact with the surface of its heated chambers, as is the case with iron grates or stoves. The delivery can be regulated at will by the opening in the top of the fireplace. The grate may also be readily converted into an ordinary or "slow combustion," by the use of another regulator, forming the front of the ash-pan beneath the fire. Altogether this arrangement is one of the best we have seen.

Messrs. A. W. Reid & Co. have pointed out to us several well considered patterns of "wash-out" closets, lavatory ranges, and other sanitary appliances.

The folding lavatories of this firm merit attention—they are neatly and well designed for use in rooms, offices, and railway carriages where it is essential to save space. Having used one of these in our study for some time, we can speak in the highest terms, both of their excellent manufacture and great convenience.

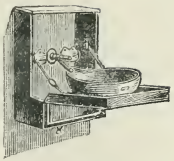

Fig. 65.

PHARMACEUTICAL PREPARATIONS.

We have received samples of the following productions :—

Asthma Powder.—A powder containing datura tatula, stramonium, cannabis indica, oil of eucalyptus and nitre, prepared by R. Sumner & Co., Liverpool, for fumigating in cases of asthma and hay fever, etc. The fumes are not unpleasant, and they produce a rapid sedative effect on the air passages.

Belladonna.—As an external application, the emplast. belladonnæ fluidum produced by Sumner & Co., Liverpool, is very much to be preferred to the old-fashioned and uncleanly belladonna plaister. The liquid is of a green colour, prepared with collodion, and dries at once, leaving a film of belladonna on the skin.

Bromo-Soda.—This is prepared in a granular effervescing form, a large teaspoonful containing caffein, 1 grain, bromid-soda, 30 grains. It is used for insomnia and nervous exhaustion. F. Newberry & Sons, 1, King Edward Street, E.C., are the manufacturers.

Bynin and its Preparations.—We have previously alluded to the value of this form of liquid malt, and the advantage it possesses in being free from the treacle-like consistence of the usual form of malt extract.

Messrs. Allen & Hanbury now send us samples of some combinations they have prepared with this substance.

"Byno-Hypophosphites" is a neutral solution of the hypophosphites of lime, potash, and manganese, and the alkaloids of cinchona, and nux vomica, with malt extract, the latter being used to take the place of the sugar which is ordinarily contained in the various syrups of the hypophosphites. It is of perfectly fluid consistence, and tastes strongly of malt, with a slight bitter after-taste, due to its active ingredients, which is not at all unpleasant. It should prove a very favourite and valuable tonic.

"Coca-Bynin" is a combination of the active principles of the coca leaves, with bynin or liquid malt. It is intended for the extemporaneous production of coca wine. In this case, the patient supplies his

own wine, and this is a decided advantage, because the sale and prescription of coca-wines have led to a great deal of drinking among women who take it as "a medicine," and with more than regularity. There is another objection to medicated wines, in the fact that it too often means the sale of a bad wine at a very high price.

We have found great benefit from small doses of coca as a remedy for nervous insomnia, and we think this preparation will prove a most reliable method of administering coca in this and other debilitated conditions of the nervous system.

Under the name of Bynol, Messrs. Allen and Hanburys produce another combination of bynin with cod-liver oil. The flavour of the malt serves to somewhat mask that of the oil, while the emulsion is so complete, that the oil is indistinguishable on microscopic examination. Its practical use has undoubtedly been attended with the very best results.

Cascara Sagrada.—Several practitioners having experienced some disappointment in the action of this drug, Dr. Rusby, of New York, has very carefully investigated the pharmacology of cascara and has found in several instances that the bark of the *Rhamuus Californica* has been employed in place of that obtained from the *Rhamuus Purshiana*, the true drug. The large consumption of the latter having nearly caused a dearth of the genuine bark, tabloids of cascara sagrada extract, containing 2 grains of a dry extract, are equal in active value to 20 minims of the fluid extract, and form a convenient method of employing it. The Valoid Fluid Extract (Burroughs, Wellcome and Co.) is also trustworthy as it is standardized. Both are prepared from the genuine bark.

The Cascara Cordial, sent us by R. Sumner & Co., of Liverpool, possesses all the virtues of the true bark, while its bitterness and disagreeable taste is to a large extent removed by the addition of aromatics. It requires to be given in doses of from 1 to 3 drachms.

Chlorodyne (Transparent).—This is the most elegant preparation of chlorodyne which has been brought under our notice; it is almost colourless, and quite transparent. There is a practical advantage in this, because any separation between the active ingredients and the menstruum (which is common in preparations of chlorodyne), can at once be perceived, instead of being disguised by the treacle which is generally added; 30 minims of this preparation is equal to morph. mur. ¼ grain; ac. hydrocyan. dil. 2 minims; chloroform 4 minims. R. Sumner & Co., Liverpool.

Coruntine (Kobert).—This alkaloid, recently isolated by Kobert, the well-known Professor at Dorpat University, is pronounced by

Schmiedeberg to possess all the properties of ergot. It causes contraction of the uterus, culminating with expulsion of its contents.

Dr. H. Thompson ("Cent. für Gyn.," March 16, 1890) has tested coruntine in three cases of labour during the time of expulsion, in twenty-one cases of atonic post partum hæmorrhage, and in a large number of cases of menorrhagia and metrorrhagia, with very satisfactory results. It was given hypodermically, $\frac{1}{30}$ to $\frac{1}{10}$ grain for a dose. Solutions do not keep well. Hypodermic tabloids, each containing $\frac{1}{60}$ grain, are prepared which are readily soluble in a few minims of water.

Dermatos Soap.—This is the production of F. James & Co., 61, Mark Lane, E.C. After carefully testing it we can pronounce it to be one of the purest soaps which has come under our observation. There is an entire absence of free alkali, and its effect upon the skin is soothing and emollient.

Diuretin (Knoll).—Is a chemical combination (1,) of theobromine with soda ; (2,) of this compound with salicylate of soda. The drug is readily soluble in water, is sweet to the taste, and odourless. Its action is powerfully diuretic, stimulating directly the renal epithelium without affecting the nerve centres or the cardiac action. Diuretin was first investigated by Drs. Gram and Schrorder, and was pronounced by them to be superior to caffeine and its salts as a diuretic, as the latter exerts a powerful excitant action on the nerve centres.

Quite recently the drug has been very carefully investigated in the Physiological Laboratory at the Cochin Hospital, Paris, under the superintendence of Dr. Dujardin-Beaumetz, and the conclusions arrived at show that it is an efficient diuretic without affecting the heart or nervous system. It is supplied in 5-grain tabloids by Burroughs, Wellcome & Co.

Dusting Powders.—We have received during the year two samples of dusting powders, suitable for surgical and nursery purposes ; that sent by Mr. Griffin, Saville Row, Bath, contains lanoline, silicates of magnesia and alumina, oxide of zinc, and boric acid. We have used this with great satisfaction in many cases of eczema and irritable skin, and its advantage over ordinary "violet powder" for use in the nursery is self-evident.

Under the name of Healing Powder, Sumner & Co. of Liverpool, send us a preparation for similar purposes, but the composition is not stated.

Ergot.—The importance of having a reliable preparation of ergot is unquestionable ; we doubt if there is anything better than the fluid extract prepared according to the valoid process. By this process,

one fluid pound of extract represents one pound of the pure standard drug. It is just three times as strong as the B. P. tincture, which may be prepared from it with the addition of 1—3 of proof spirit. Burroughs, Wellcome & Co. are the manufacturers.

Ethereal Tinctures (for External use).—Sir. Jas. Sawyer recently wrote to the "Lancet," advocating the use of ethereal tinctures for external applications to the skin, as on account of their rapid evaporation they may be used more freely than alcoholic tinctures, and because the solvent action of the ether upon the sebacious secretions is valuable in bringing the drug in direct contact with the skin.

This suggestion appears to have been rapidly adopted, for we have received samples of ethereal tinctures from three different firms.

Sumner & Co., Liverpool, sent samples of aconite, belladonna, capsicum, iodine, and menthol, prepared in ethereal solution. Each is dispensed in a stoppered bottle to which a brush is attached. Richardson & Co. of Leicester, send us ethereal solutions of menthol, and capsicum, and also liniment of capsicum ; the latter appears to us to be too mild for ordinary use, though we have no doubt the manufacturers would increase its strength if directed to do so.

Messrs. Ferris & Co., Bristol, also send us an ethereal tincture of capsicum.

In respect to the use of capsicum as a rubefacient, we may say that the simple painting of the preparation on the skin may produce a very slight stimulating effect, but if the part is afterwards well rubbed, this effect is greatly increased ; this increase in its effect also takes place if the part is exposed to heat. By attention to these facts, a strong or a mild action may easily be produced by the same preparation.

Exalgine.—Messrs. Sumner & Co., Liverpool, send this prepared in a granular effervescing form, 2 grains being contained in one drachm. This forms a very elegant method of dispensing the new analgesic, and in two cases in which we tested the samples, the result was much more satisfactory than that of antipyrin, although the dose was less by one fourth.

Glycerine Suppositories.—Richardson & Co., of Leicester, send samples of suppositories for the relief of constipation, each containing 40 minims of Price's glycerine.

Sumner & Co. send similar glycerine suppositories, with the addition of hamamelis. As we pointed out in our last issue, we consider a cacao-butter suppository, containing the glycerine in a liquid form, a much more effective method of introducing this substance into the bowel.

Hamamelis.—We have received a "distilled extract" from Sumner and Co., Liverpool, which contains all the valuable properties of the drug. Those who have used it as a vein tonic, either in varicoses, hæmorrhoids or venous hæmorrhage, will agree with us in the high estimation with which we regard the drug; but its empirical use for every kind of hæmorrhage is calculated to discredit it.

The distilled extract appears to us to find its chief uses as an external application to wounds, ulcers, etc., upon which it exercises a soothing and healing action. For internal use, we prefer the liquid extract of the U.S.P., or the tincture, as it acts well, and is far more pleasant to take. For injections in cases of piles and fissure of the rectum, we prefer the distilled extract, and we also use this in the preparation of ointments.

Under the name of Hazeline Cream Ointment, Burroughs, Wellcome & Co. have introduced hazeline in conjunction with lanoline, to take the place of ordinary cold cream. It is free from the unpleasant smell possessed by all distillates of hamamelis, and forms a very elegant unguent much more soothing and healing than the preparation it is designed to replace.

Hollow Suppositories.—These are made of cacao-butter, into which any medicament or nutritious material may be placed, and then secured with a screw cap made also of cacao-butter; it is then inserted in the bowel or vagina, where it undergoes rapid solution, leaving the desired substance in contact with the mucous membrane. The advantage of this invention is so obvious, that Brady and Martin of Newcastle-on-Tyne, who send us the samples, may expect a very large sale for them.

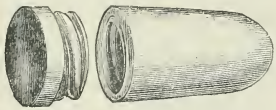

Fig. 66.

For the application of remedies designed to act upon the vaginal walls, suppositories have a peculiar advantage, and now that it is only necessary to drop the solution or the substance required into one of these ready-prepared suppositories, it is likely to be more generally adopted.

Hydrastia.—Dr. Macnaughton Jones ("Med. Press and Circ.," vol. i., 1890) recommends tabloids prepared under his direction, by Burroughs, Wellcome & Co., according to the following formula: hydrochlorate of hydrastia, ¼ gr.; ergotine, ½ gr.; cannabin tannate, ½ gr. in each tabloid, one or two for a dose three times in the day. This treatment afforded marked success in menorrhagia, metrorrhagia, and other forms of uterine hæmorrhage. He considers hydrastia

to possess all the therapeutical value of the fluid extract and tincture.

Hypophosph. Co., Hydrobrom.—A drachm of this syrup contains 1 grain of the hypophosphites of lime, soda and potash, and ½ grain of the hypophosphite of iron ; these salts are held in solution by hydrobromic acid. The preparation is most elegant, and the taste is very pleasant. We are afraid our little patients will want their medicine too often. R. Sumner & Co. of Liverpool, are the manufacturers.

Ichthyol.—This drug has recently been used in gynæcological practice by Dr. Freund, of the University, Strasburg. He administered it internally in the form of pills, one pill containing 1½ grain in the commencement, gradually increasing the quantity to double the amount, repeating the dose three times daily. For external use he employed tampons covered with ichthyol and lanoline, equal parts. Cervical erosions were induced to heal by the application of pure ichthyol directly to the lesion. The internal administration of the remedy influenced the general condition, increasing the appetite, improving the digestion, and regulating the bowels.

The results of intra-vaginal applications were a decided success, its absorbent action being very prominent. It was used in chronic parametritis with exudations, in vaginal cicatrices, in subacute perimetritis, and in inflammations of the tubes, ovaries and surrounding tissues.

Messrs. Burroughs, Wellcome & Co. are the agents for ichthyol, and supply it in capsules, 3 minims, and pills (coated) each containing 1½ grain of the soda salt. The ichthyol itself is supplied in 1 oz. and 1 lb. packages.

Iodine Colloid.—Messrs. Richardson, of Leicester, send us a sample of their iodine colloid, which is of the same strength as the B.P. liniment. The advantage of this preparation is that it leaves a film on the surface which dries rapidly. The absorption of the iodine may be promoted by covering the part with gutta-percha tissue. For all applications to the skin, this preparation is very much to be preferred to the ordinary liniment.

Iodine Leaf.—This is the invention of Mr. A. de St. Dalmas, of Leicester. A portion of the material large enough for the purpose required is cut off and applied to the part in a similar way to a mustard-leaf. It is a very convenient and efficient method of using iodine, which is a very difficult substance to carry in the surgical bag.

Liniments.—We have received two samples of liniments intended for general use and, perhaps, especially to meet the demands of patients

for "something to rub on." They may be taken as illustrating the progress of pharmacy, both as regards elegance and economy; in regard to the latter point, sixpence a pound is the price of both.

The Linimentum Album of Ferris & Co., of Bristol, is of a creamy consistence, and contains turpentine, ammonia, and soap liniment.

The Linimentum Universelle of Sumner & Co., Liverpool, is a transparent yellow fluid, containing ammonia, camphor, and other ingredients. Both are elegant preparations, suitable for any class of patient.

The efficacy of these agents lies chiefly in the method of their application. If directed to be "well rubbed in for ten minutes or longer," there is little doubt of their doing good.

Liquores (Concentrated).—Messrs. Sumner & Co. prepare a number of these preparations, so combined as to bring the dose of each to ½ to 1 fluid drachm. The following are some of the combinations which they send us: liq. bismuth et papain; liq. euonymin et pepsin; liq. euonymin and cascara sagrada; papain and iridin; podophyllin and pepsin.

Maltopepsyn.—This preparation, which is very extensively employed by our American colleagues, has much to recommend it, both from a scientific and practical stand-point. It contains saccharated pepsine, 10 grains; pancreatine, 5 grains; acid lacto-phosphate of lime, 5 grains; exsiccated ext. of malt, 10 grains; and therefore represents both the natural digestive ferments, and combines with them the diastatic properties of malt. The acid phosphate of lime represents a remedy likely to be needed as a nerve restorative in the class of cases for which these artificial digestives are used. It has this practical advantage that the taste is pleasant, and it may be taken dry on the tongue as readily as sugar, and it is decidedly less costly than most the similar agents before the profession. Messrs. Burgoyne, Burbidges & Co., 16, Coleman street, London, E.C., are the agents.

Menthol and Cocaine Snuff.—The effect of both these drugs in causing contraction of the capillary blood-vessels has led to their extensive use in catarrhal conditions of the throat and nose. A convenient method of administration for common cold in the head, and hay fever, is a snuff prepared by Messrs. Sumner & Co., and some patients have found this application give great relief to the stuffy headache which accompanies this condition. Few prescriptions are likely to give more satisfaction to patients suffering from nasal catarrh.

Nauseous Medicines.—As a method of administering disagreeable medicine, the flexible gelatine capsules sent to us by Sumner & Co. of Liverpool, remove a difficulty. The capsules are so soft and flexible, that they can be swallowed as easily as a bolus of food. The old-fashioned

form of capsule was impracticable, except with a very few patients, on account of the spasm of the muscles of deglutition which they excited. The capsules sent contain the following medicines: cod-liver oil and phosphorus, 30 minims; castor oil, 60 minims; creasote, 1 minim; paraldehyde, 30 minims; ergotine, 3 grains.

Fig. 67.

Another method of administering such remedies is offered by the medicine cachets, supplied by Messrs. Burroughs, Wellcome & Co. These are made in rice paper, moulded to a suitable shape; a little appliance is sent with each box, enabling the patient or practitioner to make the cachet when required for use, and enclose in it any liquid or solid medicine that may be required.

The idea is very ingenious but simple, for it involves neither trouble nor skill; it should prove a very useful addition to our resources, and may be counted as one of the decided novelties of the year.

Papain.—The use of this active principle obtained from the fruit of the *Carica Papaya*, is steadily increasing. Its peculiar property of peptonising albumen and fibrin is now not only extensively made use of to promote the digestion of such substances, but it has been used with the most marked success as a solvent for the membrane of croup and diphtheria. A 5 per cent. paint or spray of papain is undoubtedly the most valuable agent which can be applied in such cases, although its solvent action occupies some hours to complete.

Its solvent action has also been made use of to get rid of indurated skin, such as occurs in chronic eczema, psoriasis, warts and corns; as an application to fissure of the tongue, and for breaking up ceruminous secretions in the ear. As a digestive agent, it has been found of most service in atonic dyspepsia. It has the advantage over pancreatin and pepsin, from the fact that when the former exercises its action in an alkaline medium, and the latter in an acid medium, papain continues its digestive action throughout the whole alimentary canal. The name of D. Finkler & Co. is inseparably connected with this drug, and the samples sent us by their agent, B. Kühn, 36, St. Mary-at-Hill, London, E.C., are undoubtedly pure preparations of this interesting substance.

Messrs. Sumner & Co. also send us an "acid glycerole of papain," which is ready in its undiluted form for dissolving the diphtheritic membrane, or as a digestive ferment in doses of ½ to 1 drachm mixed with water after meals. This is the most convenient form in which it can be stocked.

Palatinoids.—Messrs. Oppenheimer Bros. & Co., must be credited with having produced, under this name, one of the most elegant and efficient methods of administering medicines which has yet been brought before the notice of the profession. A palatinoid consists of two gelatine discs shaped like a watch-glass, the edges being joined together ; in the space between them is the drug in the form of powder. The samples they send us contain (1) ferrum redactum, 2 grains: (2) bismuth sub-nit., 2 grains, with pepsin porci, 1 grain : (3) sulphide of calcium, ¼ grain : (4) pul. rhei, 4 grains. We have tested the effect of them when dropped into cold water, and we find that in a very short time the gelatine discs swell up and come asunder, and the drug distributes itself in the form of powder.

Paroleine.—This is a colourless, odourless, and tasteless fluid, with a fatty base, obtained by the fractional distillation of petroleum. It is prepared as a solution for pynol, menthol, and other volatile hydrocarbons, when they are intended to be applied by means of the "ointment atomizer" to the throat and air passages. It is the best basis we have for this method of treatment on account of the qualities above mentioned. Burroughs, Wellcome & Co. are the manufacturers.

The following substances make clear solutions with paroleine :—

Camphor 1 part	Paroleine 4 parts.	
Carbolic Acid 1 part	,, 19	,,
Eucalyptia 1 part	,, 9	,,
Menthol 1 part	,, 4	,,
Helenin 1 part	,, 9	,,
Naphthol 1 part	,, 9	,,
Salol 1 part	,, 19	,,
*Iodoform	,, 60	,,
Terebene (B. W. & Co.) 1 part	,, 4	,,
Thymol 1 part	,, 9	,,

* By using a combination of iodoform with eucalyptia the solubility is increased and the odour disguised.

Pilulæ Parvæ.—Under this name, Messrs. Ferris & Co., of Bristol, supply a number of very minute pearl-coated pills, which in spite of their size, contain active therapeutic ingredients. The following are some of the combinations of which they send us samples :—

Pil. aperiens parv.—Aloin $\frac{1}{10}$ gr.; podoph. ¼ gr. ; ext. hyoscyamus $\frac{1}{20}$ gr. ; jalapin $\frac{1}{10}$ gr. ; nux vom. ext. $\frac{1}{20}$ gr. ; capsicin $\frac{1}{20}$ gr.

Pil. alter. parv.—Hydrarg. c. cret, ½ gr. ; pulv. ipec. co. ½ gr.

Pil. tussi parv.—Morph. hydrochlor. $\frac{1}{48}$ gr. ; pulv. scillæ $\frac{1}{6}$ gr. ; pulv. ipecac. $\frac{1}{6}$ gr.

These pills are beautifully made, and on account of their small bulk admit of being easily carried in the pocket. Messrs. Ferris supply a pocket case for this purpose, which is mentioned in another section.

Roberts' Test for Sugar.—A specimen of the test solution for sugar, recommended by Sir William Roberts, was sent to us more than twelve months since by Messrs. Sumner & Co., and we have now carefully examined it with a view to testing its permanency; we find that it is quite unchanged. Fehling's solution in the same period, and under the same conditions, would have undergone oxidation. We have also assured ourselves of the great delicacy of the reagent. We conclude that in future it is "Roberts' solution instead of Fehling's" which will be connected in our minds with sugar-testing.

Salicylic Acid (Natural).—In the Dictionary of New Remedies attention is called to some very important investigations which have been made on the actions of natural and artificial preparations of salicylic acid, and their combinations with sodium, which show that the latter contains an impurity or impurities of the nature of an active poison. These investigations clearly prove that the natural salicylic acid prepared from the oil of wintergreen should be solely employed, and more especially in cases where large doses of the salt or its acid have to be administered. Messrs. Ferris & Co., of Bristol, have done well to turn their attention to the supply of these preparations, made from the oil of wintergreen. The sample of pure natural salicylic acid which we have received from them appears in large acicular crystals of a fairly yellow colour. As it is more expensive than the artificial salt, care is necessary to ensure its use in prescriptions, as the artificial acid is invariably employed.

Sennæ Leguminum Fluid.—The value of senna pods as a laxative in cases of obstinate constipation, formed the subject of a recent communication by Dr. W. A. Macfarlane. He recommends the use of ½ to 1 drachm for a dose, in a wine glass-full of cold water; it has little taste and is exceedingly certain in action, "being as harmless as castor oil." Messrs. Ferris & Co., of Bristol, send us a sample of this preparation which appears to meet all the requirements of a simple laxative.

Thymol Jelly.—This is an ointment prepared in collapsible tubes by Richardson & Co., of Leicester. We have found it cleanly in use, very soothing and thoroughly antiseptic.

DIETETIC PREPARATIONS.

Franz Josef Bitter Waters.—The treatment of various conditions due to abdominal plethora, for which patients are commonly sent to Carlsbad or other spas, may be carried on quite as well at home. The results are due to salts, which are equally efficacious when bottled and imported. If instead of using these preparations as occasional purgatives they are given in moderate doses several times a day, permanent benefit may be obtained in many chronic conditions which resist ordinary methods of treatment. Prof. Attfield considers that less of the Franz Josef water is necessary to obtain the desired result than that of any natural aperient water hitherto introduced, and our own experience with it leads us to prefer it to any other whether for systematic treatment or for use as an occasional laxative.

Meat Extracts.—The samples we have received present little novelty, but as regards these agents we prefer those which have stood the test of experience to products which may be valuable but still have their fame to make. In a case of urgency where a *meat extract* was required we should feel safer with the preparation of the Liebig Company than with the whole series of novelties in this type of food. The same may be said of Brand's meat extracts and essences, which are as well known to the profession as any remedy in the Pharmacopœia, and are justly esteemed. Mason & Co. have also established the reputation of their productions by the long trial given to them at various London hospitals, and they may be used with absolute reliance. The point upon which we think an improvement is possible is the manner in which these preparations are sent out. The stone-jar of the Liebig Company is unexceptionable, but the tins used by both the last mentioned firms are open to objection. We want to see the same advance in this department as has taken place in the dispensing of drugs. The invalid needs a change in the form of nutriment supplied, but when we open a tin of beef jelly we must finish it before we can get to the mutton or chicken jelly, or run the risk of the remainder spoiling before it can be made use of. We should like to see sufficient of these preparations for a single administration put into flexible gelatine capsules or other suitable vehicle, so that each would be preserved until it was wanted, and so that any amount of variety might be introduced into the diet. A little attention to these practical points might be of advantage to the makers as well as to our patients. We may mention that we have lately used, as a change of diet for invalids, Edwards' desiccated "White Soup" which contains no meat;

it is palatable and very nourishing, and does not disagree with those who are able to take vegetables.

Meat Lozenges.—The samples we have received of meat lozenges are very much open to improvement; they are hard and take too long to dissolve in the mouth to be of service to a professional man who needs portable nourishment in a form capable of being rapidly taken. We hope to be able to report some improvement in this direction in our next issue.

Nutritive Suppositories.—The introduction of this valuable method of administering nutriment by Mr. Griffin, of Saville Road, Bath, has been followed by some imitation which we have submitted to examination. The Griffin suppository consists wholly of nutritious matter, carefully peptonised, and when placed in 10 drachms of water at 98° F. it wholly dissolves in two minutes. The result is a thick solution which gelatinizes on being left in a cool place. We have not found any other nutritive suppository which will stand this test, and we think that the production of the original maker more than holds the field. Some improvements have been made since they were first introduced, and they are now everything that can be desired.

Wines and Spirits.—We have always found the selection of wines for patients one of the most difficult of our professional duties, and we are glad that Messrs. C. W. Pearce & Co., of Mark Lane, have made it their special business to meet the requirements of the medical profession in this matter. The "champagne" difficulty which has only recently received expression in the daily press is one which we have had before us for a long time. The method by which the best brands are maintained at fictitious prices is now very well understood, and as a sound wine is essential, the practitioner has no choice between wines in which half the purchase money goes for the label on the bottle, and the artificial concoctions in which the effervescence is produced by the introduction of carbonic acid gas under pressure. During the past few years Mr. Pearce has made several visits to the champagne district with a view to finding a wine, which could be safely recommended, at a moderate price, but owing to the peculiar customs of the trade his efforts did not meet with success. The firm then turned to the California vineyards, and although a sound wine was procured it lacked the essential features of the wine grown in France. This year they have met with better fortune, and the samples they send us, procured from vineyards in the centre of the French champagne districts, are of an undeniable excellence. We have submitted them to connoisseurs, and as the

result of their report we feel justified in saying that it would be impossible to purchase a champagne of the same all round merit without paying nearly double the price at which these are marked. Knowing the trouble which Messrs. Pearce have taken over the matter, we trust their efforts will meet with the appreciation they deserve. We have also received from the Glasgow branch of the same firm a sample of liqueur whisky which they think should meet the purposes of invalids to whom some form of stimulant is necessary. The use of whisky is recommended in preference to other spirits on account of its greater purity, but this statement does not apply to the large proportion of whiskies which are used; although it is more easy to obtain a good whisky than a good brandy. This sample is so free from the irritating properties of the ordinary whiskies that we first doubted its alcoholic strength, but having tested it we found that in spite of its bland taste and delicate aroma it is a very potent spirit. It represents the highest perfection to which the art of distilling and careful blending can be brought, and costs no more than is paid for the common form of brandy. We have marked our appreciation of this article by ordering a supply for our own use.

White Val de Penas.—This is the very lightest of light wines. Its taste is peculiar; although somewhat hock-like at first the after-taste is that of a very dry sherry. We have long made use of it personally and think it may meet the needs of those who want something between a hock and a sherry. We recommend it for the use of gouty and rheumatic patients in preference to other forms of wine. It is very inexpensive. A. Sordo Lopez, Manchester Square, W.C., is the importer.

Port Wine.—We have received a sample of port wine "especially recommended for invalids." We are sorry not to be able to support the recommendation. From the wine-trade point of view it may be regarded as "pure," but from a medical stand-point we have no hesitation in saying that it is artificially coloured and adulterated. To colour the natural wine by using the skin of another grape may be customary, but as it adds various extractive matters to the wine which are not wholesome, and wholly unnecessary, the sooner that custom is abandoned the better. We decline to notice any wine prepared in this way.

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A List of the Principal Medical Works Published during 1890, any of which may be obtained from John Wright & Co., Bristol.

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Lectures to Nurses on Antiseptics in Surgery. (Nursing Record Series.) By E. S. Bishop. 12mo, pp. 64. (25) 2/-

Manual of Nursing, Medical and Surgical. With numerous Illusts. By Laurence Humphry. 2nd ed. Cr. 8vo, pp. 240. *Griffin* . . 3/6

Medical Nursing: Lectures on. By J. Wallace Anderson. Delivered in the Royal Infirmary, Glasgow. Fourth Edition. Fcap. 8vo. (11) 2/6

Nursing: Manual of Medical and Surgical. By Charles J. Cullingworth. 3rd ed., Revised. 12mo, pp. 190 (5) 2/6

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Caledonian. Fire and Life, 19, George Street, Edinburgh. *Man.*, D. Deucher. London Office, 82, King William Street, E.C. .. .. .. P	1805	48/9	64/6	88/6	978,872
Church of England, Life and Fire, 9 and 10, King Street, Cheapside, E.C. *Sec.*, H. M. Baker P	1840	46/10	63/6	91/11	669,091
City of Glasgow. Life, 30, Renfield Street, Glasgow. *Man.*, F. F. Elderton. London Office, 12, King William Street, E.C. *Sec.* W. Kent Lennon P	1838	48/5	64/6	89/10	1,657,263
Clergy Mutual, Life, Endowments, &c., 2 & 3, Sanctuary, Westminster. *Sec.*, Matthew Hodgson M	1829	46/4	62/2	87/4	3,583,299
Clerical, Medical and General, Life, 15, St. James' Square, and Mansion House Buildings. *Act.*, B. Newbatt .. .. .. P	1824	48/9	65/-	90/9	2,890,675
Colonial Mutual, Life and Annuity, 33, Poultry. *Man.*, E. W. Browne. *A. Sec.*, B. H. Dames M	1874	44/8	60/9	86/2	1,050,574
Commercial Union, Fire, Life and Marine, 19 & 20, Cornhill, E.C. *Act.*, T. E. Young, B.A. P	1861	49/5	64/2	87/8	1,183,186
Co-operative, Fire, Life and Fidelity, Corporation Street, Manchester. *Man.*, James Odgers P	1867	45/10	61/8	87/6	2,359
Crown Life, 183, Fleet Street, E.C. *Sec.*, A. Mackay P	1825	49/3	65/1	92/5	1,743,824
Eagle, Life, 79, Pall Mall, S.W. *Sec.*, G. Humphreys, M.A., F.I.A. .. .. .. P	1807	50/8	65/5	91/4	2,614,427
Economic, Life, 6, New Bridge Street, Blackfriars. *Sec.*, J. R. Grimes. *Act.*, C. D. Higham M	1823	44/3	59/9	87/6	3,513,188
Edinburgh, Life and Annuities, 22, George Street, Edinburgh. *Sec.*, A. Hewat, F.F.A., F.I.A. London Office, 11, King William Street, E.C. *Sec.*, Frank Griffith .. .. .. P	1823	47/7	63/2	89/-	2,348,841
English and Scottish Law, Life, Annuity, Endowment, and Loan, 12, Waterloo Place, S.W. *Sec.*, F. E. Colenso .. .. P	1839	48/8	64/6	90/-	1,539,700
Equitable Society, Life and Survivorship, Mansion House Street, E.C. *Act.*, A. F. Burridge M	1762	53/5	67/11	90/8	4,398,644
Equity and Law, Life, 18, Lincoln's Inn Fields, W.C. *Act.*, G. W. Berridge .. .. .. P	1844	48/10	64/6	90/9	2,255,035
Friends' Provident, Life, Annuities, &c., Bradford, Yorkshire. *Sec.*, John Bell Tennant .. M	1832	45/9	58/1	79/3	2,010,798
General Life and Fire, 103, Cannon Street, E.C. *Sec.*, Henry Ward .. .. .. P	1837	49/10	65/4	92/8	1.044,730

A, *when Established*; B, C, D, *Annual Premiums to Insure £100 on Death, with Profits, at the age of* 30, 40 *and* 50; E, *Assurance and Annuity Funds, exclusive of Paid-up Capital.* M, *Mutual Offices*; P, *Proprietary Offices.*

Title, &c., of Society.	A	B	C	D	E
					£
Gresham, Life, St. Mildred's House, E.C. *Act.* and *Man.*, T. G. Acland .. .. P	1848	49/-	65/8	94/3	4,151,252
Guardian, Fire and Life, 11, Lombard Street, and 21, Fleet Street. *Sec.*, T. G. C. Browne.. P	1821	48/10	64/6	89/3	2,461,377
Hand-in-Hand, Fire, Life and Annuities, 26, New Bridge Street, Blackfriars, E.C. *Man.*, B. Blenkinsop .. .. M	1696	50/8	68/10	99/3	2,437,257
Imperial, Life, 1, Old Broad Street, and 22, Pall Mall. *Act* and *Man.*, J. Chisholm .. P	1820	46/11	62/1	87/5	1,430,961
Lancashire, Life and Fire, Exchange Street, Manchester. *Gen. Man.*, George Stewart. London Office, 14, King William Street, E.C. *Sec.*, John Oliver .. .. P	1852	48/6	63/6	90/6	817,350
Law Life, 187, Fleet Street. *Man.*, E. H. Holt, *Act.*, A. B. Adlord .. .. .. P	1823	49/4	64/10	91/-	4,052,258
Law Union, Life, Fire and Annuities, 126 Chancery Lane. *Gen. Man.*, R. G. Watson .. P	1854	49/4	65/3	92/-	902,273
Legal and General Life, 10, Fleet Street, E.C. *Sec.*, E. Colquhoun .. .. P	1836	50/9	65/11	90/9	2,157,259
Life Association of Scotland, 82, Prince's Street, Edinburgh. *Secs.*, J. Sharpe and J. C. Wardrop, London Office, 5, Lombard Street .. P	1838	50/-	65/4	93/4	3,466,749
Liverpool and London and Globe, Fire, Life and Annuities, 1 Dale Street, Liverpool. *Sec.*, John M. Dove. London Office, 7, Cornhill, E.C. *Sec.*, A. Hendriks .. .. P	1836	49/3	65/6	91/3	4,016,124
London Amicable, Life and Accident, 3, Regent Street, S.W. *Sec.*, Walter Wieland .. P	1887	47/10	63/5	91/4	41,430
London and Lancashire, Life, 66 and 67, Cornhill, E.C. *Sec.*, G. W. Mannering .. .. P	1862	46/10	62/4	86/10	636,067
London Assurance Corporation, Fire, Life & Marine, 7, Royal Exchange. *Act.*, A. H. Bailey P	1720	49/6	64/11	91/5	1,985,471
London, Edinburgh and Glasgow, Life, Industrial, and Accidents, Farringdon Street, E.C. *Sec.*, C. W. Skinner .. .. P	1881	48/11	64/7	92/-	43,195
London Life Association, 81, King William Street, E.C. *Act.* and *Sec.*, J. Witcher .. M	1806	59/3	77/-	107/6	4,107,043
Marine and General Mutual, Life and Marine, 14, Leadenhall Street, E.C. *Sec.*, C. G. Laing M	1852	48/10	65/11	91/11	567,192
Metropolitan Life, 3, Prince's Street, Bank, E.C. *Act.*, Arthur Pearson .. .. .. M	1835	49/9	66/4	92/-	1,917,717
Midland Counties, Fire, Life, Hail and Annuities, Silver Street, Lincoln. *Sec.*, Benjamin Vickers. London Office. 4, King William Street. *Man.*, E. A. Walford .. .. P	1851	49/11	64/8	89/6	55,390
Mutual Life, 39, King Street, Cheapside, E.C. *Act.*, H. W. Manly, F.I.A. *Sec.*, H. G. Rowsell M	1834	48/10	66/8	97/11	1,198,692
National Assurance of Ireland, Fire, Life, and Annuities, 3, College Green, Dublin. *Sec.*, Harold Engelback, London Office, 33, Nicholas Lane, E.C. *Sec.*, Charles Smith .. .. P	1822	48/7	64/3	91/7	124,656
National Guardian, Life and Loans, 21, New Oxford Street, W.C. *Sec.* Thomas J. Bourne .. P	1865	48/6	64/8	86/8	8,956
National Life, 2, King William Street, City. *Man.* and *Sec.*, H. J. Puckle .. .. .. M	1830	50/4	65/9	92/8	856,864
National Provident, 48, Gracechurch Street, E.C. *Act.* and *Sec.*, Arthur Smither .. .. M	1835	50/2	66/3	91/1	4,442,382
North British & Mercantile, Fire, Life & Annuities, 61, Threadneedle Street, E.C., and 64, Prince's Street, Edinburgh. *Life Man.* and *Act.*, H. Cockburn, *Sec.*, F. W. Lance .. .. P	1823	49/10	66/1	91/11	4,981,506
Northern Assurance, 1, Moorgate Street, E.C. *Gen. Man.*, James Valentine. *Sec.*, H. E. Wilson .. .. P	1836	48/8	64/10	92/4	2,334,069

A, *when Established*; B, C, D, *Annual Premiums to Insure £100 on death, with Profits, at the age of 30, 40 and 50*; E, *Assurance and Annuity Funds, exclusive of Paid-up Capital.* **M**, *Mutual Offices*; **P**, *Proprietary Offices.*

Title, &c., of Society.	A	B	C	D	E
					£
Norwich Union, Life. Norwich. *Sec.*, J. J. W. Deuchar. London Office. 50, Fleet Street, E.C. M	1808	51/9	66/6	92/5	1,859,189
Patriotic of Ireland, Life and Fire, 9, College Green, Dublin. *Man.*, B. H. O'Reilly. London Office, 121, Cannon St., E.C. *Man.*, W.W.Wainwright P	1824	48/8	64/5	90/4	115,717
Pearl, Life, London Bridge, City, E.C. *Man.*, P. J. Foley, M.P. .. .. P	1864	50/-	67/5	96,6	237,336
Pelican, Life, 57, Lombard Street, and 70, Charing Cross. *Sec.*, R. C. Tucker .. .. P	1797	48/9	65/2	93/6	1,172,156
Positive, Life, 25, Abchurch Lane, E.C. *Sec.*, A. G. Mackenzie .. .. P	1870	47/1	64/7	94/3	357,596
Post Office, Life & Annuities, St. Martin's le Grand, *Act.*, A. Finlaison .. .. .. P	1865	46/7	62/9	89/10	—
Provident, Life, 50, Regent Street. *Sec.*, C. Stevens P	1806	50/2	66/4	92/10	2,488,311
Provident Clerks, Life and Benevolent Fund, 27, Moorgate Street, E.C. *Sec.*, John E. Gwyer M	1840	46/4	62/8	92/2	1,528,317
Prudential (Ordinary), Life, Holborn Bars. *Sec.*, W. J. Lancaster. *Further particulars, see page* 573 P	1848	49/6	65/11	91/11	3,580,832
Queen, Fire, Life, and Annuities. Queen Insurance Buildings, Liverpool. *Man.*, J. K. Rumford. London Office, Gracechurch Street. *Sec.*, T J. Davidson .. .. P	1857	49/4	65/-	89/-	696,454
Refuge, Industrial Life, 89, Corporation Street, Manchester. *Man.*, W. Proctor. London Office, 29, New Bridge Street. *Sec.*, W. Hewitt P	1864	49/3	65/9	91/9	33,494
Reliance, Life, 71, King William Street. *Sec.*, E. C. Griffith .. .. M	1840	49/4	65/10	94/2	716,139
Rock, Life and Survivorship, 15, New Bridge Street, Blackfriars. *Sec.*, G. S. Crisford .. P	1806	53/5	67/11	90 8	1,720,115
Royal, Fire, Life and Annuities, Royal Insurance Buildings, Liverpool. *Man.*, J. H. McLaren. London Offices Lombard Street. *Sec.*, John H. Croft .. .. P	1845	49/9	64/1	88/3	3,473,104
Royal Exchange Assurance, Fire, Life, Annuities, &c., Royal Exchange, and 29, Pall Mall. *Act.*, G. H. Ryan .. .. P	1720	49/2	64/11	92/4	2,131,435
Sceptre, Life and Endowments, 40, Finsbury Pavement, E.C. *Sec.*, J. G. Phillips.. .. P	1864	48/8	64/8	90/6	376,801
Scottish Amicable, Life, St. Vincent's Place, Glasgow. *Sec.*, W. G. Spens .. .. M	1826	51/9	66/3	89/1	2,961,811
Scottish Equitable, Life, 26, St. Andrew Square, Edinburgh. *Sec.*, W. Finlay. London Office, 69, King William Street, E.C. *Sec.*, W. T. Gray M	1831	50/3	65/5	90/9	3,188,492
Scottish Imperial, Life, 183, West George Street, Glasgow. *Man.*, T. Wilkinson Watson. London Office, 4 King William Street, E.C. *Man.*, William Oates .. .. P	1865	46/7	63/5	91/7	282,879
Scottish, Life, Accident and Annuities, 77, George Street, Edinburgh. *Sec.*, James Sorley, F.I.A. London Office, 20, King William Street, E.C. *Sec.*, George Struthers .. .. .. P	1881	49/5	64/6	90/5	123,393
Scottish Metropolitan, Life, 25, St. Andrew Square, Edinburgh. *Sec.*, W. R. Macdonald, F.F.A. London Office, 8, King Street, E.C. *Sec.*, E. T. Clifford .. .. P	1876	40/8	54/7	79/7	111,367
Scottish Provident, Life and Annuities, 6, St. Andrew Square, Edinburgh. *Man.*, Jas. G. Watson. *Secs.*, J. Lamb and H. R. Cockburn. London Office, 17, King William Street E.C. *Sec.*, J. Muir Leitch. *Further particulars see page* 566 .. M	1837	41/6	54/9	81/7	6,958,466
Scottish Provincial, Fire, Life, and Annuities, 91, Union Street Aberdeen. *Man.*, T. Yuille Wardrop. London Office, 64, Cannon Street, City. *Man.*, David G. Simpson .. .. P	1825	47/11	64/8	91/8	1,542,070

A, *when Established*; B, C, D, *Annual Premiums to Insure £100 on death with Profits, at the age of* 30, 40, *and* 50; E, *Assurance and Annuity Funds, exclusive of Paid-up Capital*. M, *Mutual Offices*; P, *Proprietary Offices*.

Title, &c, of Society.	A	B	C	D	E
Scottish Temperance, Life and Accident, 81, Renfield Street, Glasgow. *Sec.*, Adam K. Rodger. London Office, 3, King Street, Cheapside. *Sec.*, Walter Cowley .. .. P	1883	48/6	63/9	89/10	56,944
Scottish Union and National, Fire, Life, and Annuities, 35, St. Andrew Square, Edinburgh. *Sec.*, J. K. Macdonald. London Office, 3, King William Street, E.C. *Sec.*, William Porteous.. P	1824	50/-	65 -	90/-	2,977.154
Scottish Widows' Fund, Life and Survivorship, 9, St. Andrew Square, Edinburgh. *Man. & Act.*, A. H. Turnbull. *Sec.*, J. J. P. Anderson. London Office, 28, Cornhill. *Sec.*, A. Day .. M	1815	51/9	66/3	90/7	10,318,840
Standard, Life, 3 and 5, George Street, Edinburgh. *Sec.*, J. H. W. Rolland. London Office, 83, King William Street, and 3 Pall Mall East. *Sec.*, W. Bentham. *Further particulars, see page* 571 P	1825	48/11	64/5	89/-	6,995,027
Star, Life, Annuities, Endowments, 32, Moorgate Street, City. *Sec.*, H. G. Hobson .. .. P	1843	48/9	64/11	90/6	2,764,848
Sun, Life, Threadneedle Street, Charing Cross, and Oxford Street. *Act.*, H. C. L. Saunders P	1810	49/2	66/6	94/2	1,986,274
Union, Fire and Life, Cornhill, and Baker Street. *Sec.*, C. Darrell .. .. .. P	1714	48/9	64/6	90/10	1,338,737
United Kent, Life and Annuities, High Street, Maidstone. *Gen. Man.*, Walter L. Seyfang. London Office, 124, Cannon St., E.C. *Man.*, A. Wallis P	1824	49/8	64/3	90/5	398,888
United Kingdom, Temp., &c, Life, 1, Adelaide Place, London Bridge. *Sec.*, Thomas Cash M	1840	48/10	64/11	90/6	4,676,872
Universal, Life, 1, King William Street, City. *Sec.*, Fred Hendriks.. .. .. .. P	1834	48/10	63 -	85/6	1,025,120
University, Life, 25, Pall Mall, S. W. *Sec.*, H. W. Andras .. .. P	1825	50/9	64/7	87/6	984,210
Victoria, Life and Endowment, Memorial Hall Buildings, Farringdon Street, E.C. *Sec.*, Arthur J. Cook .. .. M	1860	49/3	65/7	93/-	51,112
Wesleyan and General, Life, Annuities, Sickness, Moor Street, Birmingham. *Gen. Man.*, R. A. Hunt, A.I.A. London Office, 2. Finsbury Square, E.C. *Man.*, W. Syers. *Further particulars see page* 571 .. .. M	1841	48/9	66/6	96/3	222,000
West of Eagland, Fire and Life, Exeter. *Sec.*, E. H. Smithett. London Office, 20, New Bridge Street, E.C. *Man.*, G. W. Cooke .. P	1807	46/10	63 2	90/11	854,249
Westminster and General, Life, 28, King St., Covent Garden, W.C. *Act.*, Ernest Woods, F.I.A. P	1836	48/10	65/-	90/6	492,371
Whittington, Life, 58, Moorgate Street, E.C. *Sec.*, W. H. Perratt .. .. P	1855	48/-	64/2	90/8	177,593
Yorkshire, Fire and Life, St. Helen's Square, York. *Sec.*, J. A. Cunninghame. London Office, 82, Old Bond Street, E.C. *Sec.*, J. M. C. Johnston P	1824	49/7	65/-	89/1	597,735

The Standard Life Assurance Company.

Established 1825. Constituted by Special Acts of Parliament.

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ACCUMULATED FUNDS - -	£7,350,000
CLAIMS PAID - - - - -	£13,000,000

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POLICIES with Free Whole World Residence, and Unchallengeable after Two Years. Fixed Surrender Values. Moderate Premiums. Undoubted Security. Early Payment of Claims.

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JUBILEE YEAR 1891.

EMPOWERED BY SPECIAL ACT OF PARLIAMENT.

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Capital Subscribed	£1,200,000
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Fire, Reserve, and other Funds	£297,604
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Life Policies are granted under any one of the following four principal plans:—

I.—**ORDINARY WITH PROFIT POLICIES,** for those who desire at moderate rates, Assurances with large and progressively increasing bonuses.

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Moderate Rates. Liberal Conditions. Prompt Settlement of Claims.

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Every description of Life Assurance transacted on liberal terms.

Premium Income exceeds £280,000.

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British Medical Journal—Weekly 6d —429, Strand, W.C.

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A Candidate who has passed the First and Second Examinations of the University will be exempt from the First and Second Examinations of the Conjoint Board in England, and will be entitled to present himself for the Final Examination of the Board on the completion of the necessary curriculum.

The Extra Arts Examination must be passed previously to the Candidate's entry for his Third Examination for the Degree.

All information, together with Examination Papers, &c., is given in the Calendar of the University of Durham College of Medicine, Newcastle-upon-Tyne, or may be obtained from the Secretary at the College.

Scholarships, &c.—A University of Durham Scholarship, value £100—for proficiency in Arts, awarded annually to full Students in their first year only. The Dickinson Scholarship, value £15 and a Gold Medal—for Medicine, Surgery, Midwifery, and Pathology. The Tulloch Scholarship, value, the interest of £400—for Anatomy, Physiology, and Chemistry. The Charlton Scholarship, value, the interest of £700—for Medicine. The Gibb Scholarship, value, the interest of £500—for Pathology. The Goyder Memorial Scholarship (at the Infirmary), value, the interest of £325; Luke Armstrong Scholarship, the interest of £680; Stephen Scott Scholarship, the interest of £1000—for Clinical Medicine and Clinical Surgery. At the end of each Session a Prize of Books and Honours Certificates are awarded in each of the regular Classes. An Assistant Curator of the Museum, Assistant Demonstrators of Anatomy, Prosectors, and Assistant Physiologists are elected yearly. Pathological Assistants, Assistants to the Dental Surgeon, Assistants in the Eye Department, Clinical Clerks, and Dressers are appointed every three months.

The Royal Infirmary contains 280 beds. Clinical Lectures are delivered by the Physicians and Surgeons in rotation. Pathological Demonstrations are given as opportunity offers by the Pathologist. Practical Midwifery can be studied at the Newcastle Lying-in-Hospital, where there is an Out-door Practice of about 500 cases annually.

FEES.

(*a*) A Composition Ticket for Lectures at the College may be obtained—

I. By payment of 60 guineas on entrance.

II. By payment of 35 guineas at the commencement of the 1st & 2nd Winter Sessions.

III. By three annual instalments of 30, 25, and 20 guineas respectively, at the commencement of the Sessional year.

(*b*) Fees for attendance on Hospital Practice:—

For three months' Medical and Surgical Practice, 5 guineas.
,, six ,, ,, ,, ,, 8 ,,
,, one year's ,, ,, ,, 12 ,,
,, perpetual ,, ,, ,, 25 ,,

Or by three instalments at the commencement of the Sessional year—viz., First year, 12 guineas; Second year, 10 guineas; Third year, 6 guineas. Or by two instalments—viz., First year, 14 guineas; Second year, 12 guineas.

In addition the Committee of the Infirmary require the payment of 2 guineas from every Student attending the Infirmary for every year up to three years of attendance.

(*c*) Single Courses of Lectures or Tutorial Classes, 5 guineas.

Fees for Lectures, &c., at the College must be paid to the Registrar, and Fees for Hospital Practice to the House Physician at the time of entry.

Further Particulars may be obtained from the Secretary of the University of Durham College of Medicine, Newcastle-upon-Tyne.

UNIVERSITY OF EDINBURGH.

FACULTY OF MEDICINE.—WINTER SESSION.

The Winter Session begins in October.

Materia Medica	Prof. T. R. Fraser, M.D.
Chemistry	Prof. Crum Brown, M.D.
Surgery	Prof. Chiene, M.D.
Institutes of Medicine or Physiology	Prof. Rutherford, M.D.
Midwifery and Diseases of Women and Children	Prof. Simpson, M.D.
Clinical Surgery (Mon. & Th.)	Prof. Annandale, M.D.
Clinical Medicine (Tu. & Fr.) ...	Profs. Grainger Stewart, Fraser, & Greenfield; & Simpson on Diseases of Women.
Anatomy	Prof. Sir William Turner, M.B.
Practice of Physic	Prof. Grainger Stewart, M.D.
General Pathology	Prof. Greenfield, M.D.
Botany	Prof. Balfour, M.D.
Natural History	Prof. Ewart, M.D.

LECTURERS.—Clinical Instruction on Diseases of Children, James Carmichael, M.D., and John Playfair, M.B.; Comparative Embryology, George Brook; Philosophy of Natural History, G. J. Romanes, M.A., LL.D.

SUMMER SESSION.

The Summer Session commences at the beginning of May.

Botany, by Prof. Balfour. Medical Jurisprudence, by Prof. Sir Douglas Maclagan.
Clinical Medicine, by Profs. Grainger Stewart, Fraser, and Greenfield; and Prof. Simpson on Diseases of Women.
Clinical Surgery, by Prof. Annandale.
Chemistry (Advanced Class), Prof. Crum Brown. Natural History, Prof. Ewart.

LECTURERS.—Mental Diseases, T. L. Clouston, M.D.; Diseases of the Eye, D. Argyll Robertson, M.D.; Clinical Instruction on Diseases of Children, James Carmichael, M.D., and J. Playfair, M.B.; Comparative Embryology, G. Brook.

Practical Instruction is afforded in Laboratories, furnished with all the necessary appliances, and in Tutorial and Practical Classes in connection with the above chairs, and under the Superintendence of the Professors.

A copy of the Regulations for Graduation in Medicine and Surgery may be had on application to the Secretary of Senatus, or to the Dean of the Faculty of Medicine.

UNIVERSITY OF EDINBURGH, *December*, 1890.

JOHN KIRKPATRICK, *Sec. Sen. Acd.*

Royal College of Surgeons of Edinburgh.

Copies of the Regulations for the Fellowship, Licence, Diploma in Public Health, and Licence in Dental Surgery, with dates of Examinations for year 1890-91 are now ready, and may be had on application to

JAMES ROBERTSON, Solicitor, 1, GEORGE SQUARE, EDINBURGH,
Clerk to the College.

UNIVERSITY OF ABERDEEN.

FOUNDED 1494.

FACULTY OF MEDICINE.

THE Degrees in Medicine granted by the University are—Bachelor of Medicine, Master in Surgery, and Doctor of Medicine. They are conferred only after Examination, and only on Students of the University. A Diploma in Public Health is conferred after Examination on Graduates in Medicine of the University.

The Faculty of Medicine embraces eleven chairs, from which instruction is given in all the main branches of Medical Science, viz. :—ANATOMY, Prof. R. W. Reid ; NATURAL HISTORY, Prof. Alleyne Nicholson ; BOTANY, Prof. James W. H. Trail ; CHEMISTRY, Prof. Japp ; PHYSIOLOGY, Prof. McWilliam ; MATERIA MEDICA, Prof. Cash ; PATHOLOGY, Prof. Hamilton ; PRACTICE OF MEDICINE, Prof. Smith-Shand ; SURGERY, Prof. A. Ogston ; MIDWIFERY, Prof. Stephenson ; and MEDICAL JURISPRUDENCE, Prof. Hay.

Practical Classes in connection with the above chairs are conducted by the Professors, in Laboratories furnished with all the necessary appliances ; and opportunities are afforded to Students and Graduates to extend their practical knowledge and engage in original research.

Instruction is also given in special departments of Medical Practice by Lecturers appointed by the Senatus.

Clinical Instruction is obtained in the Royal Infirmary (accommodating 200 patients), Royal Lunatic Asylum (accommodating 600 patients), the Sick Children's Hospital (accommodating 75 patients), the City [Fever] Hospital (accommodating 100 patients), the General Dispensary and Lying-in and Vaccine Institutions (with 10,000 out patients annually), and, the Ophthalmic Institution (with 800 patients annually).

Bursaries, Scholarships and Fellowships, to the number of 41, and of the annual value of nearly £1,000 may be held by Students in this Faculty.

The cost of Matriculation, Class, and Hospital fees for the whole curriculum, exclusive of the fees for the Degrees, is usually about £80.

A prospectus of the classes, fees, &c., together with the regulations for Graduation in Medicine and Surgery, may be had on application to the *Dean* of the Faculty of Medicine.

Full and official information regarding the University, the Courses of Instruction given, Degrees granted in Arts, Divinity and Medicine, Conditions of the Bursaries, Scholarships, and the Examination Papers will be found in the UNIVERSITY CALENDAR, which can be procured from Messrs. A. KING & Co., University Printers, Aberdeen. Price 2s. ; by post, 2s. 4d. WILLIAM STEPHENSON, M.D., *Dean of Medical Faculty.*

THE NIGHTINGALE FUND.

Founded in 1858 by Public Subscription as a personal testimony to Florence Nightingale, in memory of her Services to the Sick and Wounded during the Crimean War.

The Council.

Chairman—Right Hon. Sir Harry Verney, Bart.

Sir Wm. Bowman, Bart., F.R.S. | Wm. Rathbone, Esquire, M.P.
Sir J. F. Clark, Bart. | Sir Wm. H. Wyatt, Kt.

Secretary.

Henry Bonham-Carter, Esq., 5, Hyde Park Square, London, W.

REGULATIONS AS TO THE TRAINING OF HOSPITAL NURSES AT ST. THOMAS'S HOSPITAL.

1.—Candidates should apply to Miss GORDON, the Matron, at St. Thomas's Hospital, subject to whose selection they will be received into the Hospital as Probationers. The age considered desirable for Probationers is from 25 to 35, single, or widows without encumbrance. The form of application and regulations will be supplied by Miss GORDON

2.—The Probationers will be under the authority of the Matron of the Hospital, and will serve for one year as Assistant Nurses in the Wards.

3.—They will be supplied with separate lodging in the Hospital, with board and washing, and with a certain quantity of outer clothing ; and they will be paid a sum of £12 during the year.

4.—At the close of a year their training will be complete, *and they will be required to enter into service as Hospital Nurses in such situations as may be offered to them.*

5.—Gentlewomen, age 26 to 36, are admitted, under Special Regulations, who desire to qualify themselves in the practice of Nursing with a view to become Matrons, Superintendents, or Hospital Sisters, or to enter upon District Nursing.

Candidates are received on the usual quarter days, if there are vacancies. Application should be made personally to Miss GORDON, *St. Thomas's Hospital, London, S.E.*, at 11 a.m. on Tuesday or Friday. The Regulations may be obtained by writing to her, or to the Secretary of the Nightingale Fund, 5, Hyde Park Square, W.

University College, Bristol.

MEDICAL SCHOOL.

WINTER SESSION, October 1st. SUMMER SESSION, May 1st.

Lecturers:

Medicine—E. MARKHAM SKERRITT, M.D. Lond., B.S., B.A., F.R.C.P., and R. SHINGLETON SMITH, M.D. Lond., B.Sc., F.R.C.P.
Surgery—N. C. DOBSON, F.R.C.S., & J. GREIG SMITH, M.A., M.B., C.M.
Anatomy—W. H. HARSANT, F.R.C.S.
Practical Anatomy—Demonstrators: W. M. BARCLAY, F.R.C.S., and J. P. BUSH, M.R.C.S.
Physiology—Lecturer, G. M. SMITH, M.R.C.S.; Assistant Lecturer, J. M. CLARKE, M.A., M.B. Cantab, M.R.C.P.
Chemistry—T. COOMBER, F.C.S.
Hygiene—D. S. DAVIES, M.B. Lond., D.P.H. Cantab.
Midwifery and Diseases of Women—J. G. SWAYNE, M.D. Lond., and A. E. AUST LAWRENCE, M.D.
Medical Jurisprudence—R. EAGER, M.D. Lond., and A. J. HARRISON, M.B. Lond.
Pathology and Morbid Anatomy—BARCLAY J. BARON, M.B., C.M. Edin.
Practical Pathology and Morbid Anatomy—BARCLAY J. BARON, M.B., C.M. Edin.
Operative Surgery—C. F. PICKERING, F.R.C.S.
Practical Surgery—A. W. PRICHARD, M.R.C.S.
Materia Medica and Thrapeutics—A. B. PROWSE, M.D. Lond., F.R.C.S.
Practical Physiology and Histology—G. F. ATCHLEY, M.B. Lond.
Physiological Assistant—J. H. PARSONS.
Botany—Prof. A. LEIPNER.
Practical Chemistry—T. COOMBER, F.C.S.
Comparative Anatomy—Prof. C. LLOYD MORGAN.
Medical Tutor—C. A. GRIFFITHS, M.R.C.S.

Composition Fee for Lectures, 60 guineas or 50 guineas.

HOSPITAL PRACTICE may be attended either at the Bristol Royal Infirmary, or at the Bristol General Hospital.

FEES (including Clinical Lectures) Infirmary: Perpetual Medical and Surgical Practice, 20 guineas each, or in one payment, 35 guineas. Hospital: Perpetual Medical and Surgical Practice, £20 each, or in one payment, 35 guineas.

SCHOLARSHIPS AND PRIZES.—Numerous valuable Scholarships and Prizes are offered by the Medical School, and by the Infirmary and Hospital.

For Prospectuses and Particulars apply to
E. MARKHAM SKERRITT, M.D., *Dean.*
Medical School, University College, Tyndall's Park, Bristol.

Yorkshire College, Leeds —Medical Department.

HOSPITAL STAFF.

Consulting Physician—T. Clifford Allbutt, M.A., M.D., F.R.S., F.R.C.P.
Consulting Surgeons—C. G. Wheelhouse, F.R.C.S.; T. Pridgin Teale, M.A., M.B., F.R.S., F.R.C.S.; T. R. Jessop, F.R.C.S.
Physicians—J. E. Eddison, M.D.; T. Churton, M.D.
Surgeons—E. Atkinson, F.L.S.; A. W. Mayo Robson, F.R.C.S.; E. Ward, M.A., M.B., B.C.
Ophthalmic and Aural Surgeons—John A. Nunneley, M.B.; H. Bendelack Hewetson, M.R.C.S.
Obstetric Physician—James Braithwaite, M.D.
Assist. Physicians—A. G. Barrs, M.D., M.R.C.P.; E. H. Jacob, M.A., M.D.
Assistant Surgeons—Walter Henry Brown, F.R.C.S.I.; R. N. Hartley, M.B., B.S., Lond.
Dental Surgeon—T. Carter, L.D.S.

PROFESSORS, LECTURERS AND DEMONSTRATORS.

Medicine—Prof. J. E. Eddison, M.D., Senior Physician Leeds Infirmary; T. Churton, M.D., Physician Leeds Infirmary. Surgery—Prof. A. W. M. Robson, F.R.C.S., Surgeon Leeds Infirmary. Practical Surgery—E. Ward, M.A., M.B., Surgeon Leeds Infirmary. Descriptive, Applied, and Practical Anatomy—Prof. T. W. Griffith, M.D., C.M. Lecturer on Osteology—Edmund Robinson, M.R.C.S. Practical Anatomy—Demonstrator: E. Fawcett, M.B., C.M. Honorary Demonstrators: G. L. Wells, M.B., B.S.; H. A. Smith, M.R.C.S. Physiology, Practical Physiology, and Histology—Prof. De Burgh Birch, M.D., C.M.A., R.B.E. Demonstrator: A. Clarkson, M.B., C.M. Pathology and Morbid Histology—Prof. E. H. Jacob, M.A., M.D., Assistant Physician Leeds Infirmary. Midwifery—Prof. C. J. Wright, M.R.C.S., Surgeon Leeds Hospital for Women and Children. Diseases of Women and Children—J. B. Heilier, M.D., Surgeon Leeds Hospital for Women and Children. Forensic Medicine—T. Scattergood, M.R.C.S., Consulting Surgeon Leeds Hospital for Women and Children: C. M. Chadwick, M.A., M.D., M.R.C.P. Physician Leeds Dispensary. Demonstrator of Practical Toxicology—C. H. Bothamley, F.I.C. Materia Medica, Pharmacology, and Therapeutics—A. G. Barrs, M.D., M.R.C.P., Assistant Physician Leeds Infirmary. Demonstrator of Practical Pharmacy—F. W. Branson, F.I.C. Chemistry and Practical Chemistry—Prof. A. Smithells, B.Sc. Demonstrator: C. H. Bothamley, F.I.C. Biology, Botany, and Comparative Anatomy—Prof. L. C. Miall, F.L.S., F.G.S. Physics—Prof. W. Stroud, D.Sc., B.A. Operative Surgery—A. W. Mayo Robson, F.R.C.S., Surgeon Leeds Infirmary. Ophthalmology—J. A. Nunneley, M.B., Senior Ophthalmic and Aural Surgeon Leeds Infirmary. Dental Diseases—W. Bevan Lewis, L.R.C.P., Medical Director West Riding Asylum, Wakefield. Hygiene & Public Health—R. N. Hartley, M.B., B.S., Assist. Surg. Leeds Infirmary.

The Lectures and Hospital Practice qualify Students for the various Examining Boards. Students can enter for the Hospital Practice, or the Lectures, or for a single Course of Lectures separately.

The Infirmary, in which the Medical and Surgical Practice is conducted, has an average of 290 in Patients. Senior Students are selected, according to merit, for several Resident Appointments. The Infirmary, the Fever Hospital, the Hospital for Women and Children, and the West Riding Asylum at Wakefield, are also open to Students. The Prospectus and further information may be obtained from the Registrar of the College.

The Middlesex Hospital Medical School.

Hospital Staff and Lecturers.—Consulting Physicians—Dr. Goodfellow, Dr. H. Thompson. Physicians—Dr. Cayley, Dr. Coupland, Dr. Douglas Powell, Dr. Finlay. Obstetric Physician—Dr. W. Duncan. Assistant Physicians—Dr. J. K. Fowler, Dr. C. Y. Biss, Dr. Pringle, Dr. W. Pasteur. Consulting Physician to Skin Department—Dr. Robert Liveing. Physician to Skin Department—Dr. Pringle. Assistant Obstetric Physician—Dr. R. Boxall. Consulting Surgeon—Mr. Nunn. Surgeons.—Mr. Hulke, F.R.S., Mr. Lawson, Mr. Henry Morris, Mr. Andrew Clark. Assistant Surgeons—Mr. Pearce Gould, Mr. J. B. Sutton. Ophthalmic Surgeon—Mr. Wm. Lang. Aural Surgeon—Mr. Hensman. Consulting Dental Surgeon—Sir J. Tomes, F.R.S., and Mr. Turner. Dental Surgeon—Mr. Storer Bennett. Assistant Dental Surgeon—Mr. Wm. Hern. Other Lecturers—Mr. B. Thompson Lowne, Mr. Foster, and Dr. Mickle.

SIXTEEN RESIDENT CLINICAL APPOINTMENTS are open to the Students annually.

ALL CLERKSHIPS and DRESSERSHIPS are awarded without fee, and the Clinical Clerk and Dresser of the Physician and Surgeon of the week dine at the Board-room table, to have the opportunity of seeing accidents and other fresh cases admitted during the evening.

TWO BRODERIP SCHOLARSHIPS, of the annual value of £30 and £20 respectively, each tenable for two years, are awarded every year for proficiency in Clinical Knowledge.

The MURRAY SCHOLARSHIP, founded in connection with the University of Aberdeen, is awarded every third year to a Student of the Middlesex Hospital.

The GOVERNORS' PRIZE OF TWENTY GUINEAS is given annually to the Student who shall have most distinguished himself in Clinical work in the Out-Patient Department during his third year.

The HETLEY PRIZE, value £25, is awarded annually for proficiency in Clinical Medicine, Surgery, and Obstetrics.

The LYELL MEDAL, value £5 5s., is awarded annually to second year's students.

EXHIBITION.—An Exhibition in Osteology, Elementary Anatomy, and Physiology, value £10 10s, will be given to the Student who, at the end of his first Winter Session, shall pass the best written and practical examination.

Middlesex Hospital Entrance Scholarships.—Entrance Scholarships in Classics, Mathematics, and Natural Science are offered for competition at the commencement of the Winter Session. Full particulars may be obtained on application to the Dean. Successful candidates are required to become general students of the School.

THE TUTORS *assist all Students, especially those who are preparing for examination, without extra fee; thus the necessity for obtaining private instruction is obviated.*

MEDICAL and SURGICAL REGISTRAR, RESIDENT MEDICAL OFFICER, DEMONSTRATORS of ANATOMY.—These valuable appointments are open to qualified men as they become vacant.

GENERAL FEE for the curriculum required by the Royal Colleges of Physicians and Surgeons and the Society of Apothecaries, One Hundred pounds; for DENTAL STUDENTS, Fifty-four guineas. The fees may be paid by instalments.

For further information apply to the Dean or the Resident Medical Officer, at the Hospital.

A. PEARCE GOULD, *Dean.*

CHARING CROSS HOSPITAL MEDICAL SCHOOL.

The Hospital has a service of 230 beds for clinical teaching, including those of the adjoining Royal Westminster Ophthalmic Hospital, to which general students are free.

TWO ENTRANCE SCHOLARSHIPS, of the value of **100** guineas and **50** guineas respectively, are awarded annually in October. The Golding Scholarship of **£15** is awarded to first-year Students. The Llewellyn Scholarship of **£25** to third-year's Students. The Governors' Gold Medal for Clinical Medicine and Surgery to Senior Students. The Pereira Prize of **£5** for the best Clinical Reports. Silver and Bronze Medals, or an equivalent in Books, and Certificates of Honour are awarded in the various classes.

FEES.—For the curriculum of study required by the various Examining Bodies, and Hospital practice, **90** guineas in one sum, or **100** guineas in five instalments.

The composition fee for Dental Students is **54** guineas, or **60** guineas payable in two instalments of **30** guineas each.

A reduction will be made in the case of students who produce Certificates on joining the School, of previous attendance on Chemistry, Practical Chemistry and Materia Medica, and an additional reduction will be made to Dental Students not at present requiring Practical Physiology.

*** The hours of lectures have been specially arranged to suit the convenience of Dental Students. Charing Cross Hospital is within three minutes' walk of the Dental Hospital of London.

The Medical School has been considerably enlarged, and, in addition to other improvements, new Buildings, including Physiological and Pathological Laboratories, Materia Medica Museum, and Anatomical Theatre, have been erected. The existing Dissecting Room and the Chemical Theatre have also been enlarged.

A Prospectus, containing much additional information, will be forwarded on application to the Librarian and Secretary, Mr. J. FRANCIS PINK, at the Office of the School, Chandos Street, Charing Cross, between the hours of 10 and 4.

STANLEY BOYD, *Dean.*

CHELSEA HOSPITAL for WOMEN,

FULHAM ROAD, S.W.

Consulting Physicians—Robert Barnes, M.D., F.R.C.P., and James H. Aveling, M.D.
Consulting Surgeons—Sir T. Spencer Wells, Bart., F.R.C.S., and Jonathan Hutchinson, F.R.S., F.R.C.S.
Physicians—Arthur W. Edis, M.D., F.R.C.P., Fancourt Barnes, M.D., C.M., M.R.C.P., and William Travers, M.D., F.R.C.S.
Assistant Physicians—Vincent Dickenson, M.D., Gerald Harper, M.D., W. H. Fenton, M.D., J. I. Parsons, M.D., and E. F. Schacht, M.B.
Anæsthetist—A. Aylmer Orr, M.B.
Resident Medical Officer—C. Mortlock, M.R.C.S., L.R.C.P.

Qualified Medical Men are admitted to the Practice of the Hospital, which has 60 beds, and to the Consultations and Operations, which take place at 2.30 p.m. on Mondays and Thursdays.

Non-Resident Clinical Assistants, who must be duly qualified Medical Practitioners, are appointed for a period of three months, upon payment of a fee of £3 3s. A. C. DAVIS, *Sec.*

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, BROMPTON.

PUPILS are admitted to the practice of the Wards and the Out-Patient Department of the Hospital, on payment of a Fee of Three Guineas for three months; Five Guineas for six months; Ten Guineas, Perpetual. Lectures and Demonstrations are given by Members of the Medical Staff on Wednesdays, at 4 p.m. Certificates of attendance on the Practice of the Hospital are recognised by the University of London, the Apothecaries' Society, and by the Army, Navy, and Indian Board. HENRY DOBBIN, *Sec.*

ST. PETER'S HOSPITAL

For Stone, Stricture, and Urinary Diseases, &c.

ESTABLISHED 1860.

HENRIETTA STREET, COVENT GARDEN, W.C.

President—Lieut.-Gen. Rt. Hon. Lord ABINGER, C.B. *Treasurer*—F. A. BEVAN, Esq.

Surgeons.

F. R. HEYCOCK, Esq., F.R.C.S. | E. HURRY FENWICK, Esq., F.R.C.S.
F. SWINFORD EDWARDS, Esq., F.R.C.S. | REGINALD HARRISON, Esq., F.R.C.S.

Resident Medical Officer—J. PENNY, Esq., M.R.C.S., L.R.C.P.

ST. PETER'S HOSPITAL is intended for Persons of both Sexes suffering from Stone in the Bladder and other Diseases of the Genito-Urinary Organs.

The Practice of the Hospital is free to Medical Men and Students.

The Hospital contains 24 Beds, and 3 Private Wards for Paying Patients.

The number of In-Patients treated during the last twelve months was **335**; **4721** Out-Patients, New Cases; **32,896** Attendances. All Patients seen without letter or recommendation.

Attendance Daily at 2, except Wednesday and Saturday; Monday, Wednesday and Saturday Evenings at 5; Fridays at 2, Women and Children only.

Clinical Arrangements.—Clinical Instruction in the Wards and Out-Patient Department is given at the following times, when the attendance of Practitioners and Students is invited:—

Monday, 2 till 3, Mr. REGINALD HARRISON, F.R.C.S.; Tuesday, 2 till 3, Mr. HEYCOCK, F.R.C.S.; Thursday, 2 till 3. Mr. F. SWINFORD EDWARDS, F.R.C.S.; Saturday, 4 till 7, Mr. E. HURRY FENWICK, F.R.C.S. Consultations will be held and operations performed on Wednesday, at 2.

A Donation of Ten Guineas constitutes a Life Governor; a Subscription of One Guinea an Annual Governor. Subscriptions and Donations will be thankfully received by Messrs. BARCLAY, BEVAN & Co., 54, Lombard St., E.C.; Messrs. HOARE & Co., 37, Fleet St., E.C.

WALTER E. SCOTT, *Secretary.*

WESTMINSTER HOSPITAL MEDICAL SCHOOL,

Broad Sanctuary and Caxton Street, S.W.

The Hospital, which has recently been enlarged and improved, contains 215 beds, and has a Special Ward for the Diseases peculiar to Women. Upwards of 2,000 In-Patients and 25,000 Out-Patients are received annually. The practice of the National Hospital for Paralysis, and that of the Royal Westminster Ophthalmic Hospital, can be attended by General Students of this School without further fee. New School Buildings have been erected, affording most complete accommodation for 120 students. The rooms and theatres are large and well lighted, and fitted with all the modern improvements.

Chief Prizes and Appointments open to competition:—Two Science Entrance Scholarships, value £120 and £40 respectively; two Arts Entrance Scholarships, value £80 and £40; an Exhibition in Anatomy and Physiology, value £10 10s., for First-year's men; Scholarship in Anatomy and Physiology, value 20 guineas, for Second-year's men; Prizes for Clinical Medicine and Surgery, of £5 each; the Chadwick Prize, value 20 guineas for General Proficiency, for Third or Fourth-year's men; the Frederic Bird Prize and Medal, value £15, for Fourth-year's men; numerous Clerkships and Dressership; and the posts of Medical and Surgical Registrar, each with £40 a year; Pathologist and Curator of Museum, each with £50 a year; and of two House-Physicians, two House-Surgeons, Resident Obstetric Assistant, Physician's Assistant, Surgeon's Assistant, and Ophthalmic Assistant.

Lecturers.—*Principles and Practice of Medicine*—Dr. Sturges and Dr. Allchin. *Surgery*—Mr. Cowell, Mr. Macnamara. *Practical Surgery*—Mr. Davy, Mr. Stonham, Mr. Spencer. *Anatomy*—Mr. James Black. *Dissections*—Mr. Stonham. *Physiology, Practical Physiology, and Histology*—Dr. Abraham. *Chemistry and Toxicology*—Dr. Dupré, F.R.S., Dr. Hake. *Materia Medica and Therapeutics*—Dr. Murrell. *Midwifery and Diseases of Women and Children*—Dr. Potter. *Forensic Medicine and Hygiene*—Mr. Bond and Dr. Grigg. *General Pathology and Morbid Anatomy, and Morbid Histology*—Dr. Hebb. *Psychological Medicine*—Dr. Mercier. *Ophthalmic Surgery*—Mr. Cowell. *Diseases of the Throat and Nose*—Dr. de Havilland Hall. *Skin Diseases*—Dr. Colcott Fox. *Aural Surgery*—Mr. Black. *Dental Surgery*—Dr. Walker. *Neurology and Alienism*—Dr. C. Mercier.

GENERAL FEES.—£105, in one sum at entrance; or in two moieties of £55; or in payments of £24 at the beginning of each of the first five sessions, Library and Tutorial Fees inclusive.

For the Dental Diploma the fees are £48 in one sum, or two payments of £30 and £20.

W. H. ALLCHIN, M.B., *Dean.*

MILDMAY NURSING HOUSE,

9 & 10, NEWINGTON GREEN, LONDON, N.

(Nursing Branch of the Mildmay Deaconesses Institution.)

Resident Superintendent, Miss DEAN. Trained Sisters and Nurses are sent into private families from this Establishment. Railway Station—Mildmay Park.

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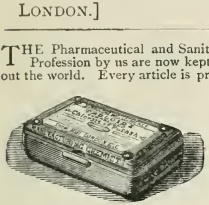

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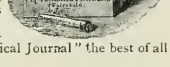

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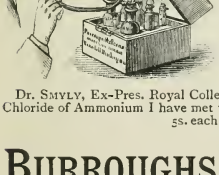

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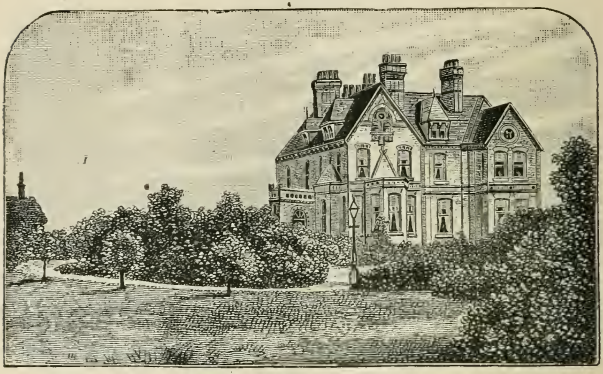

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The House stands elevated, and well in its own grounds—and is specially designed to combine asylum treatment with the privacy and comforts of home—commanding a splendid view of the surrounding country—with Croquet, Tennis ground, and Bowling Green.

"OVERDALE"

has all the characteristics of a comfortable home, and for the patients the best professional skill is provided, the present visiting Physician having had several years' experience as resident physician in a private asylum; and for their comfort, amusement, and literary wants the Proprietor and Proprietress make themselves answerable.

"The house is in proper order, the patients' rooms being comfortably furnished. The appearance as regards cleanliness of person and dress of the patients whom we saw is creditable to those in charge of them. The gentlemen, as well as most of the ladies, walk beyond the grounds . . . Mrs. LOMAS evidently gives her personal attention to the lady patients."—
Commissioners in Lunacy, 17*th September*, 1888.

FOR TERMS APPLY— **MR. LOMAS,**
Overdale, PRESTWICH, near MANCHESTER.

INCORPORATED BY *ROYAL CHARTER.*

JAMES MURRAY'S ROYAL ASYLUM, PERTH.

CHAIRMAN - - - THE VISCOUNT STORMONT.

This Asylum, for PRIVATE PATIENTS only, is beautifully situated in the immediate vicinity of Perth, in the midst of extensive PLEASURE GROUNDS, which are surrounded by the fields of the HOME FARM.

The main building has been modernized and enlarged by the addition of TWO WINGS for the reception of acute cases, fitted with most recent improvements in the means of treatment of the Insane, so as to render it an EFFICIENT HOSPITAL as well as a COMFORTABLE HOME.

The MANSION HOUSE of KINCARRATHIE, in the neighbourhood, has been taken on lease; and Houses at the SEASIDE and in the PERTHSHIRE HIGHLANDS are rented annually.

There are ample means of OCCUPATION and AMUSEMENT, and the entire arrangements are of a DOMESTIC CHARACTER.

The RATES OF BOARD vary according to the requirements and circumstances of each case. Those at the Higher Rates have private rooms and special attendance.

The Directors refer the friends of those requiring treatment to the REPORTS OF THE COMMISSIONERS IN LUNACY.

DR. URQUHART, *Physician Superintendent.*

BAILBROOK HOUSE, BATH

For the care and Treatment of Ladies and Gentlemen Mentally afflicted.

ESTABLISHED 50 YEARS.

Resident Medical Proprietor, LIONEL A. WEATHERLY, M.D., M.R.C.S

Beautiful Mansion standing in 30 acres of well-wooded Park, with lovely views of Bath and surrounding scenery. Fifteen minutes' drive from G.W.R. and Midland Stations, Bath. *Telephone No.* 49.

Horses and Carriages, Billiards, Lawn Tennis, Fishing, Boating, etc.

Great Improvements have recently been made in house and surroundings, *Vide* Visitors' and Commissioners' Reports.

A NEW WING HAS BEEN ADDED WITH EVERY MODERN IMPROVEMENT.

Terms inclusive from 2½ to 10 guineas per week, according to circumstances of case and accommodation required.

ABINGTON ABBEY RETREAT.

(Near NORTHAMPTON.)

THIS Establishment, instituted some forty-three years since for the Treatment of the Mentally and Nervously Afflicted, of the Upper and Middle Classes, and one of the earliest to adopt the enlightened and humane Treatment, since accepted as the only true method of approaching these sad maladies with the hope, if not of cure, at least of alleviation, still continues its efforts in the same spirit under the general management and control of the late Dr. Prichard's brother, who, thoroughly conversant with the treatment hitherto so successfully adopted, is also assisted by the lady members of the family and efficient Medical advice and care; the object of each being, while quietly exercising all necessary moral and physical supervision, to make the place as home-like as possible—many patients of both sexes, whose condition allows of it, daily associating, and living with the family—an end scarcely attainable under the necessarily inelastic routine of large public Establishments.

The House, within twenty-five minutes' walk of the fine Market-town and its Amusements, and of three Railways communicating with all parts of the Country, is still thoroughly retired in its fine well-wooded surroundings of many acres, with Church adjoining, and with its liberal management and home-like arrangements, will be found a charming refuge for quiet chronic cases.

For Terms and other Particulars, apply to MR. H. S. PRICHARD.

ABBEY GREEN, JEDBURGH.

Established 1871.

Dr. BLAIR receives into his House a select number of Patients suffering from Mental and Nervous Disorders.

Dry Climate. Beautiful District. Terms Moderate.

DOWNSIDE LODGE, CHILCOMPTON,

Near BATH.

This Home (long established) for the Training and Education of Girls of the Upper Classes, who are Mentally Afflicted and unfit for ordinary schools, is under the personal care and superintendence of MISS PAGE, who has had much experience in such cases. References to Medical Men and others.—Terms, &c., on application.

TRAINED MALE NURSES.

THE HAMILTON ASSOCIATION supplies Trained Male Nurses for Medical, Surgical, and Mental Cases in town or country. Terms, from ONE to FOUR Guineas per week, according to the severity of the case and the experience of the nurse supplied. Also skilled Masseurs by week or hour. Last Annual Report, Rules, etc., post free on application to the Medical Superintendent, 57, PARK STREET, GROSVENOR SQUARE, LONDON, W.

WONFORD HOUSE (HOSPITAL FOR THE INSANE),

NEAR EXETER,

A Registered Hospital for the Upper and Middle Classes.

This Institution is situated in a beautiful and healthy locality, within a short distance of the City of Exeter. There is comfortable accommodation at moderate rates, both in the Hospital itself and at Plantation House, Dawlish, a seaside residence on the South Devon Coast, affording more privacy, with the benefits of sea-air, and a mild and salubrious climate. Private Rooms and Special Attendants provided, if required. Voluntary Patients or "Boarders," not under certificates, also received.

For Terms, &c., apply to P. MAURY DEAS, M.B., M.S. Lond., Resident Medical Superintendent.

ASHWOOD HOUSE,

KINGSWINFORD, STAFFORDSHIRE.

For the reception and medical treatment of a limited number of Patients of both sexes nervously or mentally afflicted. The House stands in picturesque grounds of forty acres in extent, quite in the country. The soil sand and gravel, climate genial, the locality notoriously healthy. The Patients associate with the family. Congenial occupation is encouraged, and every possible freedom allowed, consistent with safety. Carriage exercise, billiard room, tennis lawns, and a variety of indoor amusements provided.

Medical Proprietors:—

DRS. PEACOCK and PIETERSEN.

Private Lunatic Asylum,

FIDDINGTON HOUSE, Market Lavington, near DEVIZES, WILTS.

This House is pleasantly and healthily situated, and stands in the centre of thirty acres of Pleasure Grounds, Flower Gardens, and Water. Every outdoor and indoor amusement is provided for the Patients of both sexes, and has been well reported of both by the Commissioners in Lunacy and Visiting Magistrates.

TERMS: TWO to TEN GUINEAS PER WEEK, INCLUSIVE.

Dr. HITCHCOCK, Proprietor, and Resident Medical Superintendent for the past 30 years.

BEDFORD,
BISHOPSTONE HOUSE.

(*Licensed for the reception of Ten Ladies.*)

This house is adapted for the care and treatment of every form of mental unsoundness and combines the efficiency of an Asylum with the comfort of a refined home. The staff of Attendants is so numerous as to dispense with mechanical restraint and seclusion. The limited number of patients received admits of more individual attention being given than is practicable in large institutions. The Lunacy Act of 1890 allows nervous cases, and such as cannot be properly certified, to be received as Boarders without certificates.

Advice given by Correspondence as to the MODUS OPERANDI *of the New Act.*

DR. & MRS. SIMPSON CRAIG, Resident Proprietors.

MIDLAND RAILWAY—ONE HOUR FROM ST. PANCRAS.

HARPENDEN HALL,
HERTS.

A private Asylum for Ladies of the Upper and Middle Classes. This Establishment is well adapted for the classification of cases. The rooms are large and cheerful. Private Suites of Apartments and separate attendance can be given if desired. It is delightfully situated in one of the most beautiful parts of the country. There is a large Common extending to the gates. Carriage exercise, lawn tennis, and every amusement is provided, the object of the Proprietor being to make the place as home-like and as free from the appearance of restraint as possible. It is four miles from St. Albans and twenty-five from London, on the Midland Railway.

TERMS—from Two Guineas a Week.

Apply to **A. MacLEAN**, *Proprietor and Medical Superintendent.*

NORTHWOODS HOUSE,
WINTERBOURNE, near Bristol.

PRIVATE ASYLUM FOR LADIES AND GENTLEMEN.

Situated in a large park in a healthy and picturesque locality, easily accessible by cab from Bristol, or from Fishponds, Yate, or Patchway Stations.

The Building is FIREPROOF.—For further information, see London Medical Directory, pp. 1803, and for Terms, &c., apply to Dr. Eager, Resident Physician.

THE GOVERNORS OF
THE
ROYAL HOSPITAL OF BETHLEHEM

Are prepared to receive a limited number of Male and Female Patients at Two Guineas a week.

All particulars may be obtained from the Resident Physician or the Steward at the Hospital.

SAINT GEORGE'S ROAD,
LONDON, S.E.

TUE BROOK VILLA,
Near LIVERPOOL.

PRIVATE ASYLUM FOR THE CARE AND TREATMENT OF THE VARIOUS FORMS OF MENTAL INFIRMITY OCCURRING IN LADIES AND GENTLEMEN.

This well-known Establishment has, during the last two years, undergone complete renovation, and the House is now fitted up and furnished in the most approved modern style.

The extensive Grounds, too, have had additional plantations and lawns laid down.

Amusements of all kinds provided for the Patients. The gentlemen, when able, are encouraged to employ themselves in light garden work, much to their benefit, mentally and physically.

Terms, etc., on application to the Resident Superintendent,

H. CRAWFORD MACBRYAN.

YORK LUNATIC ASYLUM.

Registered Hospital for the Care and Cure of the Insane.

The Governors of this Institution, which is capable of accommodating about 200 Patients, have expended a large sum of money in extensive alterations and improvements, which include the erection of billiard room, American bowling-alley, recreation and dining hall, in addition to spacious and well-ventilated sitting and bedrooms for first-class patients, lofty corridors for in-door exercise, and numerous and healthy sitting and bedrooms for associated patients, now offer superior accommodation for the reception of lady and gentlemen patients. The Asylum is efficiently heated by steam, has ample recreation grounds, gardens, etc., and is pleasantly situated in the suburbs of the City of York. In addition to the Resident Medical Superintendent a Consulting Physician regularly visits the patients.

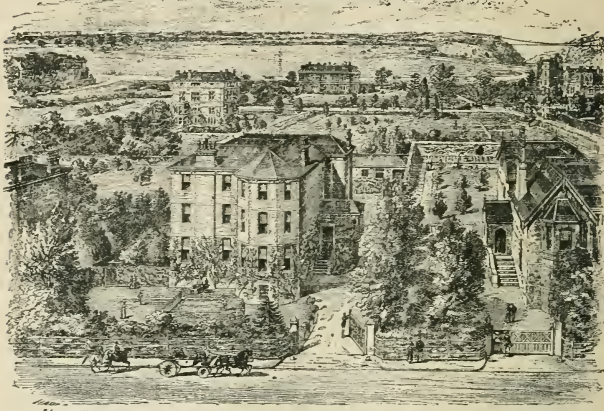
Terms, including carriage exercise, from Two Guineas per week.

There are vacancies for patients at a lower scale according to circumstances.

Information as to terms, etc., may be obtained on application to

DR. HITCHCOCK, *Resident Medical Superintendent.*

HOME TREATMENT OF THE DRINK-CRAVE



"DUNMURRY," SNEYD PARK, NEAR CLIFTON, GLOUCESTERSHIRE.

Established 1876. No one received under the Act.

A beautifully situated detached private residence, devoid of any features to distinguish it from the other houses in Sneyd Park, which is a district on the Bristol Channel side of "The Downs"—a common of 430 acres (250 feet above the sea level). Separated from Clifton proper by the whole breadth of these bracing Downs, Sneyd Park is reserved entirely for houses occupied by the wealthier classes. THERE IS NOT WITHIN A MILE OF DUNMURRY A SINGLE PLACE WHERE ANY DRUG OR ALCOHOLIC DRINK CAN BE PURCHASED. No intoxicating beverage is ever allowed into the house under any circumstances whatsoever. Clifton Down—the nearest railway station—is three hours' rail from Paddington.

Dr. and Mrs. JAMES STEWART are both total abstainers. They receive at "Dunmurry" as *voluntary* boarders in their family a few ladies and gentlemen of good social position—the total number never exceeding six—who are desirous of being cured of Inebriety. Not engaging in private practice, Dr. S. is able to devote his whole time to their treatment and constant personal supervision. The system adopted at Dunmurry is sketched in Dr. STEWART'S pamphlet on "Treatment of Inebriety in the Higher and Educated Classes." (London: H. K. Lewis.) No "nervous" or "borderland" cases are received. Highest medical references in London and the Provinces can be given.

Postal Address as above. *Telegraphic Address:* "DUNMURRY, ROCKLEAZE, BRISTOL."

VERNON HOUSE ASYLUM,

BRITON-FERRY, GLAMORGANSHIRE.

A Private Establishment for the Cure and Treatment of Persons Mentally Afflicted.

TERMS FROM TWO GUINEAS PER WEEK.

Full particulars may be obtained from CHARLES PEGGE, Proprietor and Medical Superintendent.

BUXTON.—THE DAVOS OF ENGLAND.

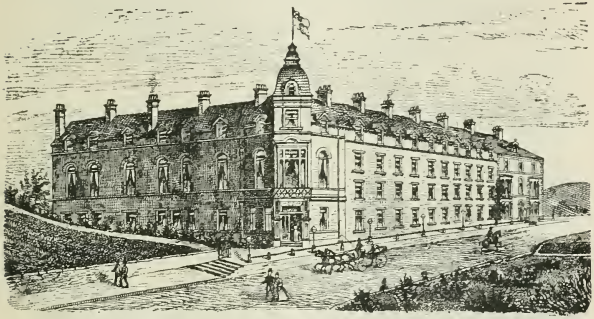
THE PEAK HYDRO.

AND

Thermal Establishment

And WINTER RESIDENCE.

(1,100 feet above the Sea.)



A High-class Establishment for Visitors & Invalids.

Within three minutes' walk of the Railway Stations, Public Baths and Gardens.

PASSENGER LIFT.

SPECIALLY WARMED & VENTILATED THROUGHOUT.

Physician, S. HYDE, L.R.C.P., &c. Magnificent Public Rooms. Table d'Hote, 7 p.m.

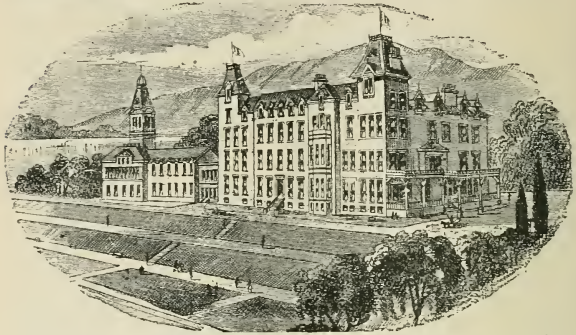
Lighted by the Incandescent Electric Light. Separate Suites of Ladies' and Gentlemen's Hydropathic, Russian, Electrical & other Baths.

Massage by Trained Masseurs and Masseuses. Luxurious Aix-les-Bains Massage Bath. Also the New Buxton Thermal Cure.

For Rooms, etc., apply to the Manageress.

SCOTLAND.

GLENBURN HYDROPATHIC, ROTHESAY, BUTE.



ROTHESAY as a Health Resort, is termed the Brighton of Scotland. Glenburn is a delightful residence protected from east winds.

An additional Drawing Room with a southern aspect, overlooking the Flower Garden, with over 20 new Bedrooms, and Nursery for Children; large handsome Recreation Hall, Music and Billiard Room, Lawn and Ash Tennis Court, Bowling, Boating.

The BATHS, Turkish, Vapour, Salt, Russian, Medicated, Electric & Swimming, finest in Britain.

Under the direction of MR. PHILP, Proprietor of the Cockburn Hotels, Edinburgh and Glasgow. } **DR. PHILP,** Resident Physician.

DEESIDE HYDROPATHIC ESTABLISHMENT,

HEATHCOT, near ABERDEEN.

THE climate of Deeside is the most healthy and bracing in Great Britain. Residents in this Establishment have the privilege of preserved Salmon and Trout Fishing in the River Dee, free, as it runs through the Estates of Heathcot and Ardoe, a distance of two miles.

The Turkish and other Baths are constructed with all the latest improvements necessary for the practice of Hydropathy.

Terms per week, **£2 10s.**; for two having same bedroom, **£2 5s.** each. **From 1st November to 30th April, £1 15s.**

For particulars apply to Dr. STEWART, Medical Superintendent, Heathcot, near Aberdeen.

SMEDLEY'S HYDROPATHIC ESTABLISHMENT,

MATLOCK, DERBYSHIRE.

Railway Station:—MATLOCK BRIDGE. Telegraph Office:—MATLOCK BANK.

Physicians:—WILLIAM B. HUNLER, M.D., &c.,
WILLIAM CECIL SHARPE, M.B., &c., *Resident.*

The TURKISH and RUSSIAN BATHS are specially adapted in ventilation and otherwise to the requirements of Invalids.

MASSAGE and ELECTRIC TREATMENT are at command.

As a WINTER RESIDENCE this place is specially adapted for sufferers from Chest disorders, Rheumatism, and Gout, affording warm and well-ventilated Public Rooms, Bedrooms and Corridors. The covered Balconies permit open-air exercise in all weathers. There are a large Billiard Room with two tables, and a Smoking Room; a Hydraulic passenger hoist to the bedroom flights, and the Public Rooms and Corridors are lighted throughout by electric light. The numbers during the Winter Months rarely fall below 130.

For full particulars see the Prospectus, to be had on application to

THE MANAGER.

TUNBRIDGE WELLS, THE SPA,

HYDRO-THERAPEUTIC INSTITUTION

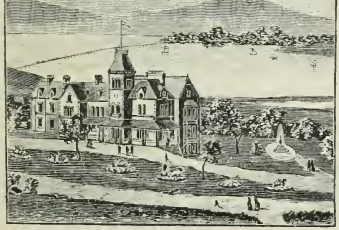
AND

SANATORIUM FOR INVALIDS AND VISITORS.

Beautifully situated on sandy soil, in its own grounds of sixty acres. TURKISH, VAPOUR, KREUTZNACH, BRINE, MEDICATED, ELECTRIC, and all forms of BATHS, DOUCHES, and HYDRO-THERAPEUTIC APPLICATIONS. Trained MASSEURS and MASSEUSES for MASSAGE Treatment. Under direct medical supervision.

All the Baths, &c., have been fitted with every modern scientific improvement. The whole Establishment is warmed throughout during winter months.

For Terms and Prospectus, apply to the Secretary.



The Mentone of England.

HAZELWOOD

Hydropathic Establishment,

Grange - over - Sands,

LANCASHIRE.

Magnificent building in own grounds, 100 feet above sea level. Luxuriously furnished.

BATHS, BILLIARDS, ETC. Terms Moderate.

Physician - - **Dr. Anderson.**
Lady Manager **Miss Knowles.**

Climate especially suitable for Chest and Throat Affections.

41

IRELAND.

ST. ANN'S HILL HYDROPATHIC ESTABLISHMENT,

BLARNEY, COUNTY CORK.

Resident Physician: M. ALTDORFER, M.D.

ESTABLISHED 1843.

CELEBRATED HEALTH RESORT, picturesquely situated on rising ground (sandy soil) and commanding a view of the far-famed Groves and Castle of Blarney. The woods and Grounds attached comprise over 600 acres, whilst there are several miles of wooded and sheltered walks in the neighbourhood.

All forms of Hydro and Electro-Therapeutic Applications; Massage and Medical Gymnastics. Turkish, Pine, Brine, Electric and other Baths.

Winters remarkably mild and even. House comfortably heated, Drawing, Reading and Billiard Rooms, Tennis.

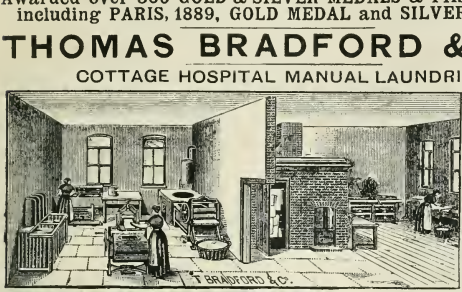
Terms 2 Guineas to 3 Guineas per week. 10 *per cent. discount allowed to Medical Men and their Families.*

Prospectus from the Secretary, St. Ann's Hill, County Cork.

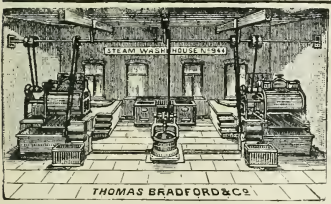
Awarded over 360 GOLD & SILVER MEDALS & FIRST PRIZES, including PARIS, 1889, GOLD MEDAL and SILVER MEDAL.

THOMAS BRADFORD & CO.

COTTAGE HOSPITAL MANUAL LAUNDRIES.



These are fitted with suitable and economic appliances. Drying closets and Horses, etc., etc., which have been specially designed by us in sizes and varieties to meet the wants arising in the smallest of these increasingly popular institutions.



STEAM LAUNDRIES FOR GENERAL HOSPITALS.

Bradford's complete Laundry Appointments, Engines, Steam Boilers, &c., as erected in the largest Hospitals and Infirmaries.

The most improved appliances for the sanitary treatment of foul and infected linen from epileptic and insane wards and fever hospitals.

BATHS, AND WARM WATER DISTRIBUTING SYSTEMS.

Bradford's Special Bath Apparatus, Patent Calorifiers, and noiseless Boiling Tanks, controlled from the Administration Block, maintain continuous supplies of Warm Water night and day throughout the most extensive Pavilion Hospitals.

WARMING APPARATUS. HIGH AND LOW PRESSURE STEAM AND HOT WATER.

For Warming the atmosphere of Wards, Corridors, Bath Rooms, and Lavatories, by direct and indirect radiation, worked in association with Bath and Laundry systems.

High class Steel Cornish, Lancashire, and Vertical Boilers.

DISINFECTING CHAMBERS, &c.

Patent Superheated Vapour; High Pressure Steam; and Hot Air Disinfecting Chambers, suitable for Infectious Hospitals, &c., inexpensive apparatus for Cottage Fever Hospitals, Disinfecting Tanks; Incinerators for Typhoid Wards, Earth-Drying Hot-plates and Stoves for Rural Hospitals.

WARM AIR VENTILATING APPARATUS AND INFECTED AIR PURIFYING FURNACES.

Improved Galton Grates and Independent Ward Stores, Bradford's Thermal Ventilators, Mechanical Ventilating and Exhaust Systems.

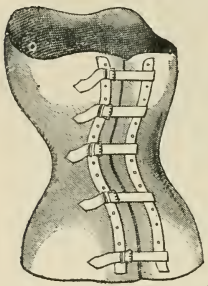
Reverberatory Gas and Coal Furnaces, for extracting and consuming the whole of the Infected Atmosphere from Small-pox and Fever Wards.

PLANS OF THE REQUISITE PREMISES, AND ILLUSTRATED DESCRIPTIVE PAMPHLET ON APPLICATION.

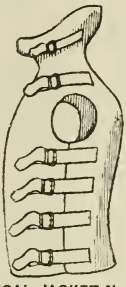
THOMAS BRADFORD & CO., LAUNDRY, DAIRY, AND SANITARY ENGINEERS,

140 TO 143, HIGH HOLBORN, LONDON | CRESCENT IRON WORKS, SALFORD.
130, BOLD STREET - LIVERPOOL | VICTORIA AVENUE - MANCHESTER.

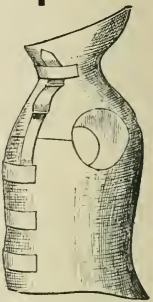
COCKING'S PATENT
Poro-Plastic Jackets & Splints.



JACKET.



CERVICAL JACKET No. 1.
Designed by
W. J. WALSHAM, F.R.C.S.



CERVICAL JACKET, No. 2.

INSTRUCTIONS FOR MEASUREMENT, &c.

JACKET. *(In cases of Slight Deformity)* :—

Circumference at axilla.
,, waist.
,, hips.
Length from axilla to great trochanter.

In severe angular cases, circumference, over apex of curve, position of same, and contour should be given; in lateral cases a description of the case.

In all cases it must be stated if for male or female.

CERVICAL JACKETS.

Same measurements and circumference at neck, and length from centre of neck to axilla.

Any part of the Jacket can in the process of Manufacture be left soft.

LEG SPLINT.

LEG SPLINT.
FOR ALL DISEASES OF THE KNEE, OR FRACTURE.

Circumference at top of thigh.	Circumference below knee.
,, above knee.	,, at calf.
,, at knee.	,, at ankle.

Length of splint as required.

State if for right or left leg.

Made with soft front or with hinge at back, and foot part if required.

When the foot part is required, also circumference at heel and instep, and length from centre of knee to ground.

If the limb is contracted the contour should be given.

A Full List of Splints and Poro-Plastic in Sheets may be had on application.

Sole Manufacturer: **J. T. COCKING, PLYMOUTH.**

LINT.

PATENT FLAX & COTTON LINTS.

OUR SPECIALITE:

EXTRA SUPERFINE CAMBRIC LINT,

Is the finest Cotton Lint Manufactured, and is specially adapted for Surgeons' private use.

ABSORBENT & CARDED COTTON WOOLS.

ABSORBENT, OPEN WHITE AND GREY

BANDAGES.

SURGEONS' & CARBOLIZED TOW.

"THE COMPLETE SURGICAL DRESSING."

"WOUND PADDING."

SPLINT PADDING.

"ABSORBENT PROOFED FELT."

"PROTECTIVE LINT."

MANUFACTURED BY THE

Liverpool Patent Lint Co.

Mark Street Mills, Netherfield Road North,

LIVERPOOL.

SPECIALITIES IN SURGICAL TISSUES.

ABSORBENT COTTON LINTS ROLL BANDAGES. FLAX LINTS. COTTON WOOLS.

PATENT ABSORBENT GAUZE & COTTON TISSUE. SOLD AS "GAMGEE TISSUE."

ANTISEPTIC DRESSINGS.

MANUFACTURED BY

ROBINSON & SONS,

COTTON SPINNERS, WEAVERS, AND BLEACHERS,

WHEAT BRIDGE MILLS, CHESTERFIELD,

And 55, FANN STREET, ALDERSGATE STREET, LONDON, E.C.

LINT.

These we make by our improved machinery, perfectly pure, strongly absorbent, beautifully soft, tears well, and very cheap. Their use in the largest Hospitals of London, Edinburgh, &c., is a sufficient guarantee of their quality. Our Flax Lint is the only ABSORBENT Flax Lint made that we know of.

BANDAGES.

Surgeons who have not seen our new White Absorbent Roll Bandages should write us for a sample. As well as being all that is required for splints, &c., being instantaneously absorbent, LOTIONS can be applied direct through the Bandage and they are also the very best Bandage for use with starch or plaster-of-Paris, &c. Robinson & Sons were the first to introduce this favourite Bandage to the Profession.

ABSORBENT COTTON WOOLS

We make a first-class article for Surgeons' private practice, and a pure cheap Absorbent Cotton for Hospital use. We are also Carders of both Grey and the ordinary grades of Non-Absorbent White Cottons.

GAMGEE TISSUE

(PLEASE READ THIS.)

This patented article, recently introduced, and of which we are the sole proprietors and manufacturers, is deservedly increasing in favour with the Profession. We quote the following extract from a Clinical Address delivered by SAMPSON GAMGEE, Esq., F.R.S.E., Consulting Surgeon to the Queen's Hospital, Birmingham:—

"On purely surgical grounds, I have no hesitation in stating that the Absorbent Gauze and Cotton Tissue prepared at my suggestion by Messrs. Robinson & Sons, of Chesterfield, is the most generally useful and comfortable, the most easily manageable, and most economical surgical dressing with which I am acquainted.

"The Tissue, as made in long lengths, is perfectly uniform in surface and thickness, and can be cut to any shape or size to pad the trunk or the limbs, in case of disease or injury. Powerfully absorbent and elastic, the tissue is equally serviceable for drainage and compression, for dressing blisters and burns, wounds and ulcers, sprains and fractures. The Tissue does not stick in wounds, and can be applied and taken off with facility and without pain. It does not lump together, but remains uniform, and is a most soothing and healing application to inflamed joints, and many skin affections.

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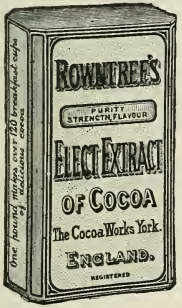

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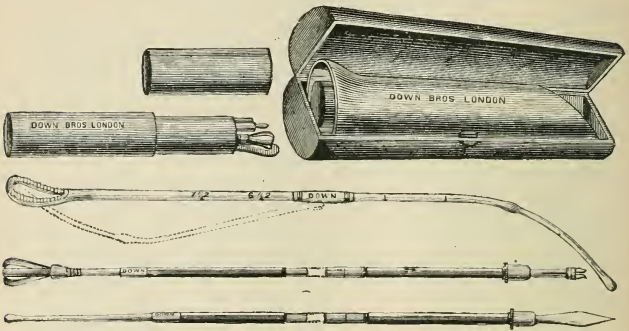

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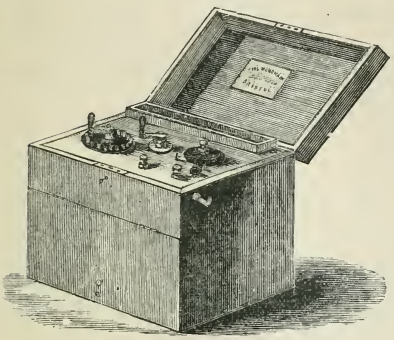

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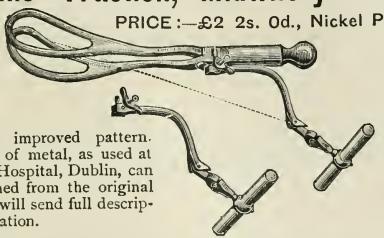

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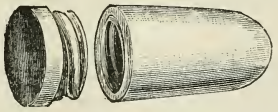

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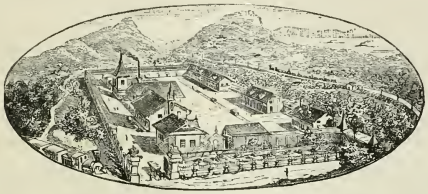

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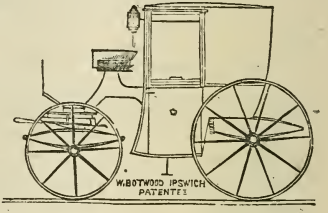

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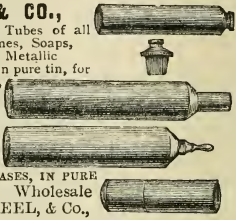

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